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A positive, educationally sound use of the Internet? Yes!

How can you use the World Wide Web as a motivating force in your classroom? How can you deal with administrators and parents who are worried about its irresponsible use in classrooms? How can a teacher hold students' attention when they run across intriguing, but not necessarily safe, Internet sites?

One great way to address these concerns is to use WebQuests. Directly relevant to the curriculum and interesting and motivating to both teachers and students, they add spice to a lesson and direct a more responsible use of the Internet. A well-written quest demands that students go beyond fact-finding: It asks them to analyze a variety of resources and use their creativity and critical-thinking skills to derive solutions to a problem. The problem is often "real world"—that is, one that needs a genuine and reasonable solution. Students use current resources from authors who are often quite accessible. Fortunately, the students usually become so busy with the task at hand that they have no time for indiscriminate Web surfing.

## THE FIRST WEBQUESTS

In 1995, San Diego State University's Bernie Dodge and Tom March developed a type of lesson plan—what they termed a "WebQuest"—that incorporated links to, from, and along the World Wide Web. Students were presented a scenario and a task, usually a problem to solve or a project to complete. The students were given Internet resources and asked to analyze and synthesize the information and come up with their own creative solutions.

Over the next three years, teachers wrote their own WebQuests, and instructors began to teach WebQuests in their workshops and classes. Fortunately, this proliferation of curricular materials convinced many teachers that it was all right to publish their own WebQuests for others. Most teachers have included their e-mail addresses, which allows a Web Quest user to contact the teacher and discuss quest results. Additionally, WebQuest sites have sprung up and continue to grow on the Internet.

## HOW TO FIND THEM

WebQuest Sites. Bernie Dodge and Tom March have Web sites with excellent WebQuest resources, and Kathy Schrock's page includes a slideshow that can help teachers design WebQuests (see "General Information on WebQuests"). Many public school systems, universities, and resources centers also have published WebQuest collections on the Internet.

Using Search Engines to Find WebQuests. The number of WebQuests posted on the Web continues to grow. You can find many of them simply by entering the keywords WebQuest or Web quest in a search engine. You'll see that some commercial companies use the name "WebQuest," but you'll also find "WebQuests" from individual teachers or pages that offer collections of WebQuests. An author's e-mail address usually is included; be sure to ask permission to include his or her WebQuest in your own.

## WRITING YOUR OWN WEBQUEST

How to Begin. Generally, when teachers put together a lesson, they think about what they want students to learn, how they will motivate and support their students,

what materials they will use, and how they will assess the students' learning. As with any lesson, teachers also must consider their students' interests, prior experiences, and reading and skill levels. A well-designed WebQuest has considered all of these elements and added relevant resources from the Internet.

**Multidisciplinary Approaches.** Most teachers who write WebQuests are driven by curricular requirements and the desire to extend their students' learning beyond the classroom. This often leads them to create interdisciplinary approaches in collaboration with other teachers.

**Three Examples.** Some WebQuests incorporate noncomputer activities, some of them outdoors. In **Pumpkin Patch**—[www.plainfield.k12.in.us/hschool/webq/webq55/bowen.htm](http://www.plainfield.k12.in.us/hschool/webq/webq55/bowen.htm)—Plainfield, Indiana, teacher Rachel Bowen had her students plant a pumpkin patch on school grounds:

As cities continue to grow and suburban sprawl takes over the countryside, fewer children have opportunities to experience nature firsthand; to actually feel the earth in their hands; to grow plants from seed. Your school is going to give inner city children these very experiences. You will be creating a pumpkin patch that will give children opportunities to grow and learn as they become active participants in your project.

Students planned how they would use the available acre of school property, created a budget, organized the planting, and developed activities for visiting students. The Indiana class was given links to gardening sites and to a seed distributor who would send free pumpkin seeds to schools. Instructors who want to use this WebQuest in their classes can request free seeds from the Burpee Seed Company (800.333.5808 or [www.burpee.com](http://www.burpee.com)) at the end of their season, around the beginning of May.

**Other WebQuests** begin by describing real-world problems. In **Are Asteroids Coming?** A WebQuest—<http://wapiti.pvs.k12.nm.us/Computer/asteroid.html>—for instance, Tami Luikart captures her students' imaginations and challenges them to find out if an asteroid could really destroy the earth.

Hollywood recently has released two box office hit movies with plots dealing with the threat of an impending asteroid collision with Earth. You are the governor of New Mexico and your office has become swamped with letters and phone calls from constituents wanting to know if this is a real threat to humanity and what the government is doing about it. People are panicked and are demanding a public response to their inquiries.

Students are assigned to write speeches for local television and are asked such questions as "Has the Earth ever been hit by an asteroid and what were the effects?" and "Should we be concerned about asteroids that are destroyed by the atmosphere before they hit the Earth's surface?" Resources include NASA's Asteroid and Comet Impact Hazards (<http://impact.arc.nasa.gov/index.html>).

Some WebQuests deal with sensitive topics and stimulate discussions of prejudice, human rights, and courage. Polly Hembree, Alicia Womick, and Jim Heffner created one such site with Anne Frank and the Children of the Holocaust—[www.spa.3.k12.sc.us/WebQuests/Anne%20Frank/index.html](http://www.spa.3.k12.sc.us/WebQuests/Anne%20Frank/index.html)—for a summer institute held in Spartanburg County, South Carolina.

Over one million children under the age of sixteen died in the Holocaust. Anne Frank was one of them. You have just been hired to help create a documentary about Anne Frank and the Children of the Holocaust for the CBS Network. Your job is to visit different web sites to research information about the courage of Anne Frank and other children of the Holocaust. You are to complete each activity or activities assigned by your teacher and follow the instructions that are given. Good Luck!

Students take a virtual trip to Germany, choose music for the documentary, read literature about the child victims of the Holocaust, gather information to interview someone who knew Anne Frank, and look at children's art about the Holocaust. This interdisciplinary project incorporates various learning styles and prompts discussions, particularly for children who are now Anne's age when she was writing her diary.

Essential Parts of a WebQuest and Guidelines for Writing Them Bernie Dodge has assembled Building Blocks of a WebQuest—<http://edweb.sdsu.edu/people/bdodge/webquest/buildingblocks.html>—to describe in detail all of the elements of a good WebQuest: an introduction, a task, a process, resources, an evaluation, and a conclusion. Many teachers have followed this outline and created effective WebQuests, and others have adapted it for their own use with equal success.

The Introduction and the Task: Writing Compelling Scenarios. Teachers' imaginations can produce limitless ideas and topics for WebQuests. Their scenarios, however, tend to fall into categories, including: bringing contemporary world problems into the classroom, evaluating history, creating products, dealing with life's realities, and sparking students' imaginations.

Bringing contemporary world problems into the classroom. Students are given a real problem, one that currently troubles a local or the world's population. The topic may be environmental, political, or sociological and can range from polluted rivers to human rights to endangered animals. Often these problems defy easy solution, but nonetheless students are challenged to come up with feasible resolutions, engage in debate, reach consensus, and formulate a plan.

Evaluating history. Many WebQuests let students look closely at wars, major tragedies, disasters, or periods of exploration. When dealing with historic difficulties, teachers challenge students to imagine themselves as eyewitnesses. As a result, we have seen excellent WebQuests on the Civil War, the sinking of the Titanic, the Great Depression, and a range of historic voyages from Noah's Ark to Apollo 7.

Creating a product. Some WebQuests end with the creation of concrete items such as images of murals or flower beds, multimedia productions, or menus for multicultural dinners. Students research their projects using both traditional and Web resources. The topic might be anything from whales to Bach to the first printing press.

Dealing with life's realities. The task is something a student might actually encounter: finding a job, buying a car, traveling to another city or country. The students can use such online resources as employment pages, airline schedules, and money-exchange charts.

Sparking the imagination. Students' imaginations can be triggered by a trip through outer space, a journey back in time, a visit to the ocean's bottom, or a journey through the human body. Additionally, students might be given superpowers such as the ability to fly or to become invisible. They may have time machines or submarines.

Formulating questions is one of the biggest challenges to producing an effective WebQuest. Short-term quests may require that students search for facts, but long-term projects must require students to answer difficult questions and analyze information. For example, "Compare the foreign policies of George Washington and Theodore Roosevelt," or "Write about how your home life contrasts with the life of a child your age who lived in the 1890s."

The Process. In the process section, the teacher guides the students through their task, often using a numbered, step-by-step guide. The teacher also may suggest ways to manage time, assign roles, or collect data more effectively. Some teachers lay out a time line with deadlines, strategies for working together in a group, or directions for writing a storyboard. These helpful hints are sometimes kept separately and identified or labeled as learning advice.

**Resources: Gathering Relevant Materials and Links.** After you decide on your topic and have written the introduction and the task, you must identify the resources your students will use. Remember to cite texts, reference books, videotapes, places, and people who may be useful or even essential resources. You might ask students to interview their peers, teachers, or parents, and you might have them go to the library, a museum, or a local store to gather information.

Obviously, though, Web sites form the core of a WebQuest resource section. To create a concise, relevant list of sites, you must explore and evaluate many of them and then choose only those that are relevant and acceptable. Some sites will have conflicting views and incomplete and inaccurate information. You can use these diverse views as a starting point for discussion, particularly with older students: "How do you decide which author is credible?" "What makes a good Web site?"

**Using print resources to find relevant sites.** Before even starting to search the Web for appropriate sites, consult journals, magazines, and books for the addresses of appropriate sites. Check Classroom-Connect magazine; it is an excellent source of high-quality, educationally sound Web pages.

**Using search engines and directories.** When you are ready to search the Web, create a list of key words and phrases and then find out how each search engine handles them. Some require key words and phrases to be placed in quotes. Fortunately, most engines have help sections.

**Using Web sites.** Most Web sites fall into one of three categories: commercial, noncommercial, or run by an individual.

- \* **Using commercial sites.** These sites can be rich with information. Web sites supported by network and cable television stations, newspaper and magazine sites, and travelers' information sites fall into this category. They can be interesting, current resources, but the advertising can be distracting to students and sometimes inappropriate.

- \* **Using noncommercial sites.** Sites organized by such nonprofit institutions as museums, public school systems, and universities vary greatly in quality but many can provide valuable, advertising-free information. The Library of Congress ([www.loc.gov](http://www.loc.gov)) and San Diego Zoo ([www.sandiegozoo.org](http://www.sandiegozoo.org)) are good examples.

- \* **Using individuals' sites.** Web pages assembled by individuals show that the Internet truly is a place where anything can be published. Many people post valuable and free resources such as public domain clip art. There are, however, many unreliable, inappropriate, and out-of-date sites, and many disappear quickly. Some have content to which school administrators and parents object—and with good reason. Teachers thus must explore each site they intend to use in their WebQuests thoroughly and restrict students to those sites for their projects. Fortunately, with the growing numbers of WebQuests available, individual teachers and students are creating a boundless resource of reliable and safe information.

**Evaluation.** Many WebQuests result in products—paper or oral reports, multimedia presentations, dramatic performances, artwork, or musical compositions. The most appropriate evaluation tool for all of these forms often is a rubric that is used by the teacher and perhaps by other students. The most effective rubrics include a variety of criteria and benchmarks for accomplishment in each category. See the Resource section at the end of this article for Web addresses.

**The Conclusion.** The conclusion brings closure to the WebQuest, summing up the project and reviewing what the students have learned. Students are asked to continue reflecting on and exploring their topic. This may also be a time when a teacher gets feedback from students.

**Spreading the Word.** Before you begin a WebQuest, contact parents, administrators, and colleagues to let them know what you and your class will be doing. You might

invite other teachers to collaborate or ask for their support. A letter to parents also can prevent misunderstandings and alleviate concerns that students are indiscriminately using the Internet.

Most teachers are not accustomed to promoting themselves, even when they are starting exciting projects that encourage creativity and learning in their classrooms. Local newspapers, television stations, and radio stations are often interested in technology's positive uses. Consider telling your local media about your Internet experiences and how much your students learned. Parents and administrators will see what good work you are doing, and taxpayers will better appreciate where their technology dollars are going.

### CONCLUDING REMARKS

WebQuests can invigorate a curriculum and enliven a class. The Internet is becoming an increasingly important and useful resource, and teachers can harness its potential rather than be overwhelmed and discouraged by its enormous size. With careful planning, WebQuests can allow both students and teachers to be creative and productive, using this powerful medium to spark the imagination, solve problems, and promote discussion about important issues.

### ADDED MATERIAL

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### RESOURCE

Tom March and Bernie Dodge WebQuests: [www.ozline.com/webquests/rubric.html](http://www.ozline.com/webquests/rubric.html) and <http://edweb.sdsu.edu/webquest/webquestrubric.html>.

Subject: Project-Based Learning, Technology, Information Literacy, Agriculture, Space Science, History

Grade Level: K-12 (Ages 5-18)

Technology: Internet connection, Web browser

### GENERAL INFORMATION ON WEBQUESTS

Three specific Web sites offer a great deal of information on WebQuests and how best to use them.

\* Bernie Dodge's The WebQuest Page—<http://edweb.sdsu.edu/webquest/webquest.html>—includes a valuable resource section called "Reading and Training Materials."

\* Tom March's WebQuests for Learning—<http://ozline.com/webquests/intro.html>—offers good reasons to use WebQuests and also includes a guide to designing them (<http://www.ozline.com/webquests/design.html>).

\* Kathy Schrock's WebQuests in Our Future: The Teacher's Role in Cyberspace—<http://discoveryschool.com/schrockquide/webquest.html>—includes a slideshow with guidelines for WebQuest development.

### COLLECTIONS OF TEACHER AND STUDENT EXPERIENCES AND WEBQUESTS

The following are just a few of the many sites that offer rich collections of WebQuests and information on them.

\* The College of Education, Louisiana State University—<http://asterix.ednet.lsu.edu/edtech/webquest/>—offers a baker's dozen elementary, middle, and secondary school sites created by students in LSU's education program.

\* Spartanburg District 3 Country Schools in South Carolina—[www.spa3.k12.sc.us/WebQuests.html](http://www.spa3.k12.sc.us/WebQuests.html)—offers both information for and by teachers and approximately 50 amazing student-created WebQuests. Here you can find everything from The Camp Seagull WebQuest and Create a Zoo Exhibit to A Mozart WebQuest and WebQuest Tornado!

\* Pojoaque Boot Camp's WebQuests—<http://wapiti.pvs.k12.nm.us/Computer/>—likewise offer 33 far-ranging student WebQuests.

\* Educational Media and Technology—<http://itdc.sbcss.k12.ca.us/curriculum/webquest.html>—this run by the San Bernardino County Superintendent of Schools District. It offers more detail on each WebQuest in its list, which divides into elementary (e.g., The World of Puppets) and secondary (e.g., BioDesigns, Incorporated) quests. Many of these have won significant awards for their creativity and detail.

Integrating the Internet into the Curriculum: Using WebQuests in Your Classroom—<http://121.ed.psu.edu/linktuts/inteweb.htm>—offers the history of and reasons to use WebQuests, 10 sites to get you started, and a variation on a Dodge template that can be used for your own class quests.

WebQuests Written by Memphis City Teachers—[www.memphis-schools.k12.tn.us/admin/tlapages/web\\_que.htm](http://www.memphis-schools.k12.tn.us/admin/tlapages/web_que.htm)—has 19 WebQuests for kindergarten through secondary school produced by 16 different teachers.

NMSU Student WebQuests—[www-education.nmsu.edu:8001/webquest/examples.html](http://www-education.nmsu.edu:8001/webquest/examples.html)—offers approximately 50 WebQuests created by New Mexico State University education students for the elementary, middle, and secondary school, and even adult students. Many of the sites also offer Spanish-language versions.

Webquests for the School Year—<http://academynet.hughesacad.state.sc.us./web.html>—from Hughes Middle School and the School District of Greenville County, South Carolina—has plenty of sites for middle-school students and teachers to examine. They're classified by grade level and appropriate placement in each year's instructional calendar.

\* The New Hampshire Educational Media Association's NHEMA Summer Institute—[www.nhptv.org/kn/nhema/webquest/webquest.htm](http://www.nhptv.org/kn/nhema/webquest/webquest.htm)—offers roughly a dozen well-chosen links to information on WebQuests, as well as links to the quests themselves.