A Teacher's Guide to the Internet

Grade Level: Teachers of All Curriculum Areas & Grade Levels

Goal:

To facilitate the introduction of technology and The Internet into the classroom at all grade levels and curriculum areas.

Objective:

At the end of the unit, the teacher will be able to:

• Describe the Internet and how it can be utilized in the classroom.
• List the Internet tools and their uses.
• Access the Internet and use a World Wide Web search engine to complete keyword searches.
• Compare and contrast the various World Wide Web search engines.
• Access World Wide Web sites for incorporating into the curriculum utilizing various teaching strategies.

Duration:

Time will vary depending upon the amount of time spent "surfing" and the categories of interest and applicability to each teacher's area of expertise. Average time will be approximately 4-5 hours of online time.

Instructional Strategy:

General information has been provided at the beginning of each section. Although specific tasks have not been given, it is recommended that you spend your online time following the general guidelines given in each section to explore the Internet sites provided. As you complete each of the sections, keep track of the Internet sites and strategies you would employ with your students as you introduce them to the Internet.

You might want to consider creating a notebook with general Internet information such as search engine addresses, on-line tutorials, etc. and keep it next to your Internet station(s) in your classroom.
Prerequisite:

A short introduction to the Internet with information on access and addresses is required before going on-line. It is recommended that you are familiar with the World Wide Web and Gopher.

Materials Needed by Teacher:

Notebook for recording teaching strategies and lesson plan notes

Teacher Notes:

This activity is intended for the teacher who is interested in utilizing the Internet in the classroom but is not sure how to begin. This is not intended to be a general overview to the Internet and all its vast tools, but instead a presentation of educational uses for the Internet either by K-12 teachers and/or students.

Again, this is applicable to every curriculum curriculum area and grade level. It is up to you to pick and choose the Internet uses which seem most appropriate for your given situation.

Web sites will be presented in the following format: quotation marks will contain the Web page name while the URL (Universal Resource Locator) or address will appear in bold type.
Introduction:

Internet literally means "network of networks." When you connect to the Internet, you allow your computer to branch all over the world, thus giving you access to people and information worldwide.

A seemingly endless amount of information exists on the Internet. Some of it is sponsored by official organizations (such as the University of Minnesota, NASA, ERIC, etc), and some information is placed by hobbyists. Internet users range from corporations, research scientists, government officials, and educational institutions. The Internet can be used for different purposes: sharing information, advertising, distributing software and researching.

Different tools are used to access information on the Internet.

- World Wide Web - a hypertext front-end navigator for the Internet
- Gopher - a tool to present information in menus
- Newsgroups - online conferences or bulletin boards
- E-mail - electronic mail
- Chat - real-time interactive exchanges
- FTP or File Transfer Protocol - ability to transfer files from another system
- Telnet - login to a remote system on the Internet and execute commands

For additional information on "What is the Internet?," visit the following Web sites:

- "Roadmap for the Information Superhighway Internet Training Workshop" at [http://www.hart.bbk.ac.uk/~trish/maponline/ROADMAP.html](http://www.hart.bbk.ac.uk/~trish/maponline/ROADMAP.html)
  Participate in an on-line workshop provided by MIT which covers the tools of the Internet.
  Provides a listing of Internet related information presented in guide format. A great place to begin to build an understanding of the Internet and its tools.
"Entering the World Wide Web: A Guide to Cyberspace" at http://www.cornell-iowa.edu/InternetDocs/guide.61/guide.toc.html Everything you ever wanted to know about the World Wide Web can be found at this site along with general information on the Internet and why it is so popular.


With anything, there are certain rules or codes of conduct which go with the Internet. It is important that your students have an awareness and an understanding of these rules before actually spending time surfing the net. The rules or code of conduct which govern the Internet are known as "netiquette." What better way to get your license to drive on the information highway than by exploring and learning about the rules directly from the Internet. Netiquette can be explored in more detail online in Section #1.

Now that you have a general idea of what the Internet is, the next question is "Why would you want to use the Internet in an educational setting?" Some of the uses seem obvious; others are a little more subtle and require creative re-thinking of current activities and tasks.

The following list will provide you with ideas for utilizing the Internet in your classroom. This same list can be explored in more detail in Section #2.

- E-mail
- Electronic mentoring
- Competitions
- Current information
- Publish information
- Electronic field trips
- Expeditions
- Research
- Teacher resources

Be aware that this list is by no means all encompassing. It is just a start to the many ways the Internet can bring the world to your classroom.

Section #1: I Need an Answer!

Before you got your driver's license and were able to navigate a vehicle on your own, you had to take a class, study the rules governing the road, and complete several hours of training behind the wheel. The same preparation should be taken when thinking about entering the information superhighway.
There is an established set of rules or code of conduct which have been set up to ensure the Internet is used properly, with respect to other users and the available resources. The rules established for using the Internet are referred to as "netiquette." Each of the Internet tools has unique guidelines. Before seriously accessing the Internet, it is a good idea to make sure all users have an understanding of the rules. As you explore the sites below, keep in mind which ones you would use with your students to prepare them for their Internet adventures.

- Visit "Netiquette 101" at [http://www.netlinks.net/Netlinks/NEWBIE/NETIQUET.HTML](http://www.netlinks.net/Netlinks/NEWBIE/NETIQUET.HTML) for a comprehensive Web site describing the emerging norms for proper communication on the Internet.
- "Internet Revealed - Netiquette" at [http://www.revealed.net/IRWeb/INM/netiquette.html](http://www.revealed.net/IRWeb/INM/netiquette.html) was compiled to take the mystery out of communicating and effectively utilizing the resources found on the Internet. This is a well organized introduction to the netiquette for each of the Internet tools.
- An online book with an introduction and the basics of netiquette can be found on the Web site "Netiquette" by Virginia Shea at [http://bookfair.com/Services/Albion/TOC0963702513.html](http://bookfair.com/Services/Albion/TOC0963702513.html).
- "Map07: Netiquette" at [http://www.hart.bbk.ac.uk/~trish/maponline/MAP07.html](http://www.hart.bbk.ac.uk/~trish/maponline/MAP07.html) is an excerpt from the Roadmap for the Information Superhighway Internet Training Workshop which covers everything from evangelism to flaming.
- Explore the Web site "The Net: User Guidelines and Netiquette" at [http://rs6000adm.fau.edu/rinaldi/net/index.htm](http://rs6000adm.fau.edu/rinaldi/net/index.htm) for an extensive guide to the Internet and the netiquette associated with each of the tools of the Internet.

**Section #2: Why the Internet in Education**

**E-MAIL**

E-mail is one of the most powerful tools of the Internet. Not only does it open a line of communication between teachers, students, and parents, it also opens up global communication capabilities. The concept of "pen-pals" is nothing new to teachers. However, technology has changed the way pen-pals communicate. No longer are we dependent upon "snail-mail". Internet pen-pals, often times referred to as key-pals, allow students to engage in real-time interaction with other students all over the world! Image the possibilities.

Sites to visit:
• "Intercultural E-Mail Classroom Connections" at http://www.stolaf.edu/network/iecc by St. Olaf College (Northfield, Minnesota) provides a free service to help teachers and classes link with partners in other countries and cultures for e-mail classroom pen-pal and project exchanges.
• "Project Watch" at http://www.hmco.com/hmco/school/projects/keypal.html is a key-pals wanted page advertising key-pals for classroom projects. This page is part of the Houghton Mifflin Education Place.
• "KIDLINK" at http://www.kidlink.org/ provides a global dialog for children between the ages of 10-15. This Web page offers several ongoing projects in which students can participate individually or as a class.

ELECTRONIC MENTORING

No longer do you have to be the expert on everything in your classroom. The Internet not only allows you and your students to access the world, but it also allows you to bring experts or "mentors" in many different areas to assist with problems, student questions, and inquiries. Listed below are some Web sites which may be of help to you in the classroom.

Sites to visit:
• "Ask an Expert Page" at http://njnie.dl.stevens-tech.edu/curriculum/aska.html lists experts from all walks of life. Experts have been categorized by subject areas, ranging from hydrology and geology to curators.
• "Ask Dr. Math" at http://forum.swarthmore.edu/dr.math/dr-math.html provides answers to those nagging math questions about homework, puzzles, math contests, and math education. Questions and answers are listed by school level and specific math skill. Questions from your students can be submitted through e-mail.
• "Ask the Astronomer" at http://www2.ari.net/home/odenwald/qadir/qanda.html answers e-mail questions about astronomy and space science. An archive of past questions and answers is also provided.
• "Ask the Dietitian" at http://www.hoptechno.com/rdindex.htm is a great resource for people who are concerned about their health and nutrition. Answers to questions are presented in over fifty categories of health related topics. Everything from food allergies to anorexia is covered.
• "Volcano World" at http://volcano.und.nodak.edu/ allows you to tap into a volcanologist who can greatly enrich the learning experiences of students through information, photographs, data, and interactive experiments involving volcanos.
COMPETITIONS

The Internet also provides a great means for global competitions. Many Web sites post challenges, puzzles, questions, and problems for students to solve as groups or individually. Typically, solutions are submitted via e-mail with winners' names being posted on the actual Web site. Some competitions even offer prizes to all winning solutions.

Sites to visit:

- "Crayola Home Page" at http://www.crayola.com/crayola/ asks students from around the world to "tell a story--and become famous." The Storybook Maker Contest calls for young writers to write a story for Crayola. The winner will have his/her story published as a book.
- "Volcano World" at http://volcano.und.nodak.edu/ conducts a monthly contest to test your knowledge of volcanoes. Questions are posted each month and answers can be submitted through e-mail.
- "ThinkQuest" at http://www.advanced.org/thinkquest/ is a Web page devoted to an annual contest for students grades 7-12 to use the Internet as a collaborative interactive teaching and learning tool.
- "Global SchoolNet Sponsors WWISE Contest" at http://www.gsn.org/gsn/contest/index.html issues a monthly challenge. Each month's contest is sponsored by a business or corporation working in the education industry, offering valuable resources as prizes for the monthly winner.

CURRENT INFORMATION

A major advantage of using the Internet in the education environment is the currency of the information being accessed. In the dynamic world in which we live, printed material becomes more and more outdated due to its lengthy publishing process. The Web offers many sites which provide real-time information - perfect for students conducting research or reporting on current events. Consider the textbooks and maps currently in your classroom.

How current and accurate is the information they provide? As you continue your exploration of Internet sites, begin to take note of the date found on each Web site. You will be surprised how quickly your perspective will change.

Sites to visit and explore:

- The "Sydney 2000 Olympic Games" at http://www.sydney.olympic.org will provide up-to-date information on the Olympic events as they happen from Sydney, NSW, Australia.
• CNN Interactive" at http://www.cnn.com presents an interactive look at the most current, and topical information making the news for the day. Explore sports, weather, and health news along with many other categories.
• "USA Today" at http://www.usatoday.com offers its newspaper online with current news information on the weather, money, sports, and other general news.
• "The Weather Channel" at http://www.weather.com/ is a web site devoted to providing the current weather, weather outlooks and forecasts, and "weather whys?" on every state in America.

PUBLISH INFORMATION

The Internet also offers a new outlet where students can post and distribute their work. Publishing is often the reason for a school or school district to consider creating their own Web page as a vehicle for publishing, sharing and showing off the work of their students to a wide audience.

Sites to visit:

• "CRAYON: Create Your Own Newspaper" at http://crayon.net/ offers children the opportunity to create their newspaper. An e-mail address is a must to participate in this activity.
• "CyberKids" at http://www.cyberkids.com/ offers a place where kids can post artwork and musical compositions, as well as a place to meet key-pals.
• "KidPub" at http://www.en-garde.com/kidpub posts children’s work and offers another place for meeting key-pals.
• "KidNews Main Menu" at http://www.vsa.cape.com/~powens/Kidnews3.html offers various news features aimed for students at various levels. Students may submit creative writing, news stories and events occurring in their home town, as well as sports information, movie and book reviews. An e-mail address is required to submit and participate in this cyberspace tabloid.

ELECTRONIC FIELD TRIPS

No longer do teachers and students have the power and privilege to take field trips as they once did. But never fear, the Internet is here. Now teachers and students can take electronic or "virtual" field trips to remote sites, locations and museums around the world. The Web brings the world to your classroom, without the bumpy bus ride.

Sites to visit:

• "Exploratorium Museum Home Page" at http://www.exploratorium.edu gives an interactive tour, complete with photographs, on-line exhibitions, and activities for kids of all ages.
"Electronic Field Trip to the United Nations" at http://www.pbs.org/tal/un provides students with a glimpse of the UN through its history, defining documents, and current actions. Classroom activities also accompany this Web site.

"The Bosnia Virtual Fieldtrip" at http://geog.gmu.edu/gess/jwc/bosnia/bosnia.html offers a glimpse of the war ravaged country often in the news. Students can learn about the background, people and places of the country.

"The Seven Wonders of the Ancient World" at http://pharos.bu.edu/Egypt/Wonders can be explored in depth through this Web site. Historical information, maps and other related information are included on each of the seven wonders.

"Preview the Heart" at http://sln2.fi.edu/biosci/preview/heartpreview.html provides a tour of the heart, a place not reachable by a bus!

**EXPEDITIONS**

The Internet does not just stop with virtual field trips. Students can also take expeditions with explorers. Follow satellites and astronauts as they explore the atmosphere beyond our world. Or take an online trip to the Antarctic or Mt. Everest with true adventurers. Rich activities such as these also bring the world into your classroom, making students feel connected to the people and their experiences.

Sites to visit:

- "An Appalachian Adventure" at http://www.nando.net/AT/ATmain2.html chronicled journalists from five newspapers who hiked the 2,158-mile Appalachian Trail. Take part in this experience without ever leaving home.
- "Everest Assault '96" at http://www.nbc.com/everest followed the '96 expedition. Meet the climbers, learn about the mountain, and discover daily expedition talk.
- "Live from Antarctica" at http://quest.arc.nasa.gov/livefrom/livefrom.html is a project designed to allow students and teachers the opportunity to experience life in the coldest place on the planet, Antarctica. The project started in January 1997.
- "TerraQuest: Virtual Expeditions on the Web" at http://www.terraquest.com/ allows you take a trip on the Web. Join various adventurers as they explore Yosemite National Park, the Galapagos Islands, and Antarctica.
- "Online From Jupiter" at http://quest.arc.nasa.gov/galileo/index.html tracked the progress of the Galileo spacecraft as it encountered Jupiter in December of 1995.
**RESEARCH**

The Internet's most basic use in the classroom environment is researching information on any subject area imaginable. No matter what your topic is, there is information about it on the Internet. The search engines presented and utilized in Section #3 are a great place to begin researching specific topics. The sites listed below provide more general research types of information such as online dictionaries and reference materials.

Sites to visit:

- "Bartlett's Familiar Quotations" at [http://www.cc.columbia.edu/acis/bartleby/bartlett/index.html](http://www.cc.columbia.edu/acis/bartleby/bartlett/index.html) is a collection of passages, phrases and proverbs which have been traced to their sources. A search vehicle exists on the site which allows you to locate quotes through word searches.
- "Internet Public Library Youth Division" at [http://ipl.sils.umich.edu/youth/](http://ipl.sils.umich.edu/youth/) consists of an on-line library for young students. This site includes a newsletter for kids, responses by illustrators and authors to questions from children, and an exploration of the world of reading. It even includes a story hour!
- "Roget's Thesaurus" at [http://humanities.uchicago.edu/forms_unrest/ROGET.html](http://humanities.uchicago.edu/forms_unrest/ROGET.html) includes the full text of Roget's Thesaurus version 1.02 for locating those elusive words as you are completing papers and projects.

**TEACHER RESOURCES**

There is no doubt the Internet is a great resource for students of all ages, but let's not overlook the power of the Internet as a teacher resource. The Internet can be a great communication vehicle for teachers around the globe. In addition, teachers can find lesson plans, ideas, enrichment and enhancement activities, and services of all kinds developed and marketed specifically for teachers and their classrooms. Many colleges, universities, and business offer educational sections on their home pages which contain teacher materials, student activities, and other useful information for educators.

Sites to visit:

- "Busy Teacher's WebSite" at [http://www.ceismc.gatech.edu/BusyT](http://www.ceismc.gatech.edu/BusyT) offers a vast resource of Web sites for teachers with lesson plans and classroom activities listed according to subject and topic areas.
• "Collaborative Lesson Archive" at http://faldo.atmos.uiuc.edu/TUA_Home.html provides a means for sharing and distributing lesson plans for all grade levels. Lessons are organized by grade level and unit topics.
• "Teacher Talk" at http://education.indiana.edu/cas/tt/tthmpg.html is a forum for teachers to find stimulating ideas for creative teaching, ways to understand the needs of adolescents, and practical tips on how to use a variety of techniques in your classroom.
• "Teachers Helping Teachers" at http://www.pacificnet.net/~mandel contains basic teaching tips for inexperienced teachers, along with teaching methodologies, tips, and implementation ideas.
• "AskERIC" at http://ericir.syr.edu has a database of lesson plans on a variety of subjects, research materials, and a question and answer service.

Section #3: Search Engines

The Internet's World Wide Web is a huge collection of information that is impossible to get your arms around. To date, there is no listing of all available Web sites and there probably never will be. Since address are continually changing, an index or listing of Web sites would be out-of-date upon publishing, especially since countless numbers of Web sites are created daily. So what's a teacher to do?

To help you in your quest for conquering the World Wide Web, general purpose search engines exist which can complete word(s) searches on the topic for which you are looking. For example, if you are preparing for unit on weather, you might key search on the word "weather" or "hurricanes." The search engine would respond with what are called hits, or sites, which have been located that contain something about "weather" or "hurricanes."

Remember search engines look for a match to the word for which you are searching. You may see sites dealing with weather "hurricanes," as well as the sport team "Hurricanes."

Although many search engines exist, the listing below provides you with some of the best and most popular. Try completing the same search on each of the search engines listed so you can begin to compare and evaluate their usefulness to you. You are sure to locate a favorite.

• "AltaVista" at http://www.altavista.digital.com/
  Billed as the largest Internet index in existence, it provides access to over 10 billion words and 21 million Web pages.
• "Electric Library" at http://www.k12.elibrary.com/classroom/
  A true cyberspace library which conducts real research.
• "Excite" at [http://www.excite.com](http://www.excite.com)
  A new search tool which provides access to over 50 million Web sites on the Internet. It contains a new percentage ranking system for fast search results which most closely match your query.

• "Magellan" at [http://www.mckinley.com](http://www.mckinley.com)
  An online directory of reviewed and rated Internet sites. In addition, it allows you to search on "green lite sites" or sites found to be free of adult material and safe for students and kids viewing.

• "SavySearch" at [http://guaraldi.cs.colostate.edu:2000/form](http://guaraldi.cs.colostate.edu:2000/form) links to a dozen Internet search engines. When a keyword(s) is entered, it searches all engines at the same time. This is a very popular site and it may take some time to get your results.

• "Yahoo" at [http://www.yahoo.com](http://www.yahoo.com)
  A very popular and easy-to-use topical index to the World Wide Web’s information.

• "Yahooligans at [http://www.yahooligans.com/](http://www.yahooligans.com/)
  A web guide specifically designed for kids. This is a solid resource which offers safe viewing by students and kids of all ages.

Search engines are a great jumping off point when you begin a new unit, topic, or theme in your curriculum. Not only is it a good beginning for you, the teacher, it is also a great tool for students who are beginning their research on a particular topic or subject area.

**Section #4: Schools and Their Home Pages**

Taking Internet’s World Wide Web one step further, schools around the world are creating their own Web pages to show off student work, post school calendars and notices, and present their school community to the world.

The following Web sites will link you directly to schools on the Web:

• View the oldest and most comprehensive list of K12 sites on the Internet at "Web66" at [http://web66.coled.umn.edu](http://web66.coled.umn.edu)

• Search for school home pages by state at the "HotList of K-12 Internet School Sites" at [http://rrnet.com/~gleason/k12.html](http://rrnet.com/~gleason/k12.html)

• School Web sites from around the globe can be found at "Classroom Connect" at [http://www.classroom.net](http://www.classroom.net)

• "NASA K-12 Internet: Schools on the Net" at [http://quest.arc.nasa.gov/online.html](http://quest.arc.nasa.gov/online.html) also lists schools that have a presence on the Web.