Thirteen EdOnline

The Practical Web Service for Teachers

Thirteen EdOnline is Thirteen/WNET's educators' online resource. Thirteen EdOnline serves teachers, parents, caregivers, and adult educators with lesson plans, activities, and Web sites carefully selected by Master Teachers for their educational merit and value. Included on the site are an Internet Primer, interactive online courses, special online education projects, and much, much more. Best of all, Thirteen EdOnline is completely FREE.

In order to receive some of the special options that Thirteen EdOnline has to offer, you will need to become a subscriber. Once you have entered your name, e-mail address, and other information on a short online form, your homepage is personalized to get you information you can use right away, a Thirteen EdOnline Bulletin will be e-mailed to you on the first of every month and valuable online functions and projects will be made available for subscribers only. Over 30,000 educators nationwide have become part of the Thirteen EdOnline community.

Here are some of the services Thirteen EdOnline offers:

- Thirteen EdOnline's homepage is customized to each user according to the user's **personal profile**, which can be easily edited. The homepage also includes an online poll.
- The Thirteen EdOnline **Bulletin**, e-mailed monthly to our subscribers, offers the latest highlights on Thirteen EdOnline, Adult Ed Online, Ready to Learn, Thirteen Online, and On-Air. The bulletin also features interesting, up-to-date news synopses relevant to technology and education.
- Each month, there is a new Thirteen EdOnline **Theme** with related lesson plans, Web sites, Thirteen’s on-air and off-air programs, and much more. This is one of our newest and most-appreciated features, offering the many wonderful resources Thirteen has to offer in one cohesive package.
- Thirteen EdOnline's **Best Lessons** section archives original lesson plans in all K-12 basic disciplines. The site features two new lesson plans each month written by teachers in the field

who incorporate the Internet with good teaching in the classroom.

- The **Internet Primer** introduces basic technologies to subscribers who are new to the Internet. This section periodically features personal stories from teachers who have successfully used the Web in their classroom.
- **Concept to Classroom** is our 11-part workshop about educational theories and practices and how to institute them in the classroom, complete with expert-developed content, discussion boards, interviews, video enhancements, and much more.
- **Students' Take** is the newest section of Thirteen EdOnline that gives students a chance to voice their opinions on social issues to an audience of teachers. Students publish their work in the Students' Take section of Thirteen EdOnline, and their projects relate to the monthly Thirteen EdOnline Theme so you can use them with your own students.
- **Ready to Learn Online** is a companion for the Ready to Learn (RTL) service. This Web site supports and extends the mission of the service – namely, to aid caregivers, parents, and teachers – by integrating Ready to Learn television programs into daily care, conducting workshops, providing an information-rich quarterly newsletter, and much more.
- **Adult Education Online** is designed to help busy adult educators find high-quality resources they can use in their classrooms. Adult Education Online provides list of relevant materials, lesson plans, Web site reviews, GED test applications, and testing sites.

NTTI Online

Visit the NTTI site to find information that supplements the resources provided in the workshops and in this binder.

You can access NTTI Online by going to

www.thirteen.org/edonline/ntti

- Access information about the project's mission and its sites around the country.
- Go to the lesson plan section to find a database of hundreds of K-12 lessons created by Master Teachers.
- Practical classroom-tested tips by NTTI Master Teachers are included to give reliable and accurate guidelines on using technology to enhance your curricula. Choose the **RESOURCES** tab on the NTTI homepage, then go to Internet Strategies and choose "Advice from Master Teachers."

The Internet Primer

Introduction

The Internet is now over thirty years old, so should we trust it? In 1969 the first message consisted of the letters "LO," an attempt to type "LOGIN." The “G” crashed the system...it seems that the two alphanumeric characters overloaded the system’s 12K of memory. We have come a long way since then.

What is the difference between the World Wide Web and the Internet?

Remember DOS? Green text on a black screen that characterized the early personal computers?

Note

For more information, visit the **Internet Primer** on the Thirteen Online Education site at **www.thirteen.org/edonline/primer/index.html**.

Here's an analogy: the Web did for the Internet what the Windows operating system did for the DOS computing environment: it provided a graphical interface and the ability to display images and many other media (sounds, video, and animation). The Web provides a wide array of resources to support the classroom curriculum in a user-friendly interface that kids seem to enjoy.

The Web is really a subset of the Internet, yet it has engendered the explosion and hype that propelled us into the "Information Age." What follows is a brief overview of the story of the Internet.

Sometimes called the information superhighway, the Internet offers everyone a way to gather information from all over the world in a matter of seconds.

Note

Many sites don’t require “www” in the URL and actually won’t connect if you do use it. Many sites, though, own the domain rights to both versions such as:

http://pbs.org

http://www.pbs.org

It's amazing! The World Wide Web has reached its adolescence, growing over the last decade from a small institutional mail system to a global communication network used by millions of people in 150 countries. You can zoom from Los Angeles to Moscow just by hitting the enter key! Essentially, the Internet is a large number of computers throughout the world linked by phone lines, cable lines, and other methods that allow them to communicate with each other. Each day, millions of people use the Internet to send messages to each other through e-mail. They also look for information on topics that are of interest, ranging from nuclear physics to hot vacation spots. No matter what your interests are,

using the Internet can be fun, informative, and easy. Like any adolescent, the Internet faces new challenges and expectations. It's not without growing pains and the awkward afflictions that come with rapid growth. And then there is the question of authority: Who's in charge of the Internet? Who dictates how it develops? As Internet users, we are Internet shapers and designers, consumers, researchers, educators, and communicators. We have the opportunity to shape the future by means of this exciting tool.

History

The World Wide Web as we know it today is only a recent stage in the evolution of the Internet. In the late 1960s, spurred by the Cuban Missile Crisis, the Rand Corporation explored the idea of linking computers. They proposed that computers, which they referred to as Nodes, be linked in such a way that they would all have equal status in being able to send and receive information. Part of the plan was to ensure that if any part of the network was destroyed, the remaining parts would still function.

In 1968, the Pentagon began to fund the project through the Advanced Research Projects Agency (ARPA). In approximately one year, ARPANET was created, connecting Nodes at four major universities in the United States with the first “LO” (an attempt to type “LOGIN”) being sent from UCLA to Stanford University. Because of its success, thirty-seven Nodes were online with each other by 1972. ARPANET made its first international connections in 1973. By 1984, ARPANET was referred to as the Internet and the National Science Foundation became its major funding source in the US, Japan, the United Kingdom, and parts of Europe that joined with the US to further develop the Internet.

The early 1990s saw the birth of the first World Wide Web browser known as "Mosaic." In February of 1993, the Internet took a major leap forward with the release of the first version of Mosaic. Mosaic enabled graphics to be viewed over the Internet and would later evolve into the Netscape Navigator. By October of 1993, there were about 200 Web servers or "host computers." Today it is estimated that over 38 million servers are now online. The World Wide Web is an ever-changing environment and Web site addresses change as they move from one server to the next.

Internet Tools

E-Mail

Electronic Mail (e-mail) is one area of the Internet with which many people are familiar. Just like sending a letter (often called "snail mail" by e-mail users) via the postal system, e-mail allows you to send messages to other people on the Internet. Instead of days or weeks, it takes only seconds for your message to reach your recipient. Another benefit of e-mail is the cost. The price of sending e-mail is only the cost of your connection to the Internet, and many companies offer this service for free. E-mail is a handy way to stay in touch with friends and relatives across the world. It eliminates "telephone tag," and furthermore, you can send a message with the near-complete assurance that it will be received. Many businesses use e-mail for customer-service correspondence.

The World Wide Web and Browsers

The World Wide Web is based on **hypertext**. The Web is a network of hyperlinked Internet resources containing text, audio, and video packaged in an easy-to-use format. You can access this wonderfully organized Web through something called a "browser," which can read documents, fetch documents, access files, read newsgroups, communicate with remote sites, launch programs, and even read and send e-mail.

A **browser** is a program that you use to navigate on the World Wide Web. These programs help your computer communicate with other computers by using established protocols. By entering the correct URL, or Web site address, the browser takes you to the desired location. The most popular browsers, Internet Explorer and Netscape, are graphical browsers. They allow you to view the unbelievable number of graphics you can find on the Internet. Graphical browsers make the Internet a fun place to visit. Both Internet Explorer and Netscape allow you to just point and click your mouse to navigate. If you need to save time, most graphical browsers give you the option to turn off the graphics. This will make "surfing the Web" faster, especially if you are working on an older computer with dial-up Internet service.

Once you learn how to "surf the Web," you'll find a wealth of information at your fingertips, and you can also learn how to "capture" images and other information and save them to your local computer's hard drive.

In conclusion, the World Wide Web is an ambitious attempt to organize the billions of bytes of information throughout the Internet in a user-friendly format.

Push and Related Technologies

Developing technologies continue to make it even easier to get the latest news from the Internet. In addition to regular Web sites, which make you come to them for information, the Internet offers intelligent agents, push technology, and news report sites that bring the news to you. Intelligent agents allow you to delegate work back to your computer. They locate and filter information. Push technology delivers the information you want to your computer. There are several categories of push technology. Notifiers watch Web sites you have specified and tell you what has changed. Filters extract information that matches key words you have specified.

Push technology is most commonly used by major "portals" such as Yahoo!, Lycos, Excite and AOL allowing you to customize your Internet experience by setting up your homepage to provide you with exactly the kinds of up-to-date information that you wish to view. They usually set these free services up as "My Yahoo!" etc.

Search Engines (Sites to Speed Up Your Queries)

A search engine enables you to search for what you are specifically looking for. Today's most popular search engine, Google (www.google.com) allows you to easily conduct "subsearches" (a search within a search), another, HotBot (http://hotbot.lycos.com) allows you to search by exact phrase or require video, image, or sound files to narrow your results. Other search engines are called "metasearch engines," that search many search engines simultaneously. Try Metacrawler (www.metacrawler.com) and Dogpile (www.dogpile.com) to see this type of search engine.

In any case, the more specific the search, the better your results. See the "Searching the Web" section for a more detailed explanation of techniques and terminology.

What You Need to Get Connected

Note

Much of this section (and more) is available online at Thirteen Online Education under the **Internet Primer** heading at

www.thirteen.org/edonline/primer

To access the Web a computer must have, at the bare minimum, 16 megabytes of RAM and a color monitor displaying at least 256 colors. There are ways to get around these minimums: if you don't have a color monitor, you can still get online with an e-mail and text-only Web browser, such as Lynx.

Two important things that will affect a computer's ability to help you move around effectively online are:

1 Processor Speed/Clock Speed In advertisements, you'll read about Pentium machines or Power Macs running at 500 megahertz – but what does that mean?

"Pentium" and "Power PC" primarily refer to the processor chip or central processing unit (CPU) of the computer. The processor performs all the computational tasks, or instructions, that are invisible to us when we change the font in a word processing document or draw a line in a paint program. As processors become increasingly efficient they are able to process an increasing number of instructions and our computers – in conjunction with software – are seen as being capable of doing more and more sophisticated work at faster rates.

Processors perform these instructions under a time frame, or cycle. These cycles are measured in megahertz, or millions of cycles per second. This is known as clock speed. As processors become increasingly efficient, the time it takes to complete a cycle becomes shorter, and computers work faster and faster.

So a computer with a clock speed of 200 megahertz may not be as fast as another machine with a more efficient processor running at 180 megahertz. The answer to "How fast is that computer?" is a combination of processor and clock speed.

2 Quantity of RAM RAM (Random Access Memory) is the amount of "processing space" your computer has to accomplish a computational task. Measured in megabytes (or MBs), the more RAM you have, the better; RAM will affect the speed at which your applications run in addition to allowing you the option of running several applications simultaneously. Also note that newer

versions of system software and Web browsers require more and more RAM.

Don't confuse the size of your hard drive with the amount of RAM in your machine. While both are measured in megabytes, your hard drive is primarily storage space; RAM is processing space. For example, a computer may have 128 MB (megabytes) of RAM and 60 GB (gigabytes) of hard drive storage space.

With computer processor speeds and clock speeds increasing at an exponential pace, it's a common reaction to hesitate when considering purchasing a computer. But because this feverish pace shows no sign of slowing down, you should purchase a computer when you need one. We suggest buying a machine with the fastest processor and clock speed you can afford. Be certain to ask your vendor about upgrade options.

Types of Computers

Recognize that at some point you might want to upgrade the computer you're purchasing; most new computers will allow you to expand both hard drive capacity and RAM, connect other devices like printers and external drives, and accommodate new add-ons such as video or processor upgrade boards.

The following list includes some of the common computer makes and models and their Internet access capabilities:

PC - 386, 486, 5x86, and Pentium and compatibles
(compatibles may include the 6x86, K5, or K6 chips)

Capabilities Full Internet access

Limitations Needs at least 24 megabytes RAM to run Web browsers.

PC - 286 and earlier

Capabilities Text-only Internet – e-mail and Lynx

Limitations Will not run graphics-based Web browsers like Netscape and Internet Explorer.

Macintosh - G4, G3, Power PC, Performa, II

Capabilities Full Internet access

Limitations Needs at least 24 megabytes RAM to run Web browsers.

Macintosh - Classic, Plus, SE, and other black-and-white screens

Capabilities Text-only Internet - e-mail and Lynx

Limitations Will not run graphics-based Web browsers like Netscape and Internet Explorer.

Major Computer Makers

Go to the following computer manufacturers' home pages to be directed to information on educational discounts.

Apple Computer
www.apple.com

For information on educational discounts, go directly to Apple's education section.

Compaq Computer Corporation
www.compaq.com

Dell Computer Corporation
www.dell.com

For information on educational discounts, go directly to Dell's education section.

Gateway 2000
www.gateway.com

Hewlett-Packard
www.hewlett-packard.com

Hitachi
www.hitachi.com

IBM
www.ibm.com

Toshiba
www.toshiba.com

Modems

Modems (an abbreviation of **mod**ulator-**dem**odulator) are the devices that let your computer talk to other computers via phone lines.

Computers converse digitally in zeros and ones. The voice conversation that you have over a telephone line is analog, which uses sounds waves. If you want to use a phone line to transfer computer information, you need to use a modem to adapt the connection.

As with computers themselves, speed is the most important feature when purchasing a modem, and is directly related to faster or slower access to the Internet. You should purchase the fastest modem you can afford – one that runs at least 33,600 bps (a.k.a. "a 33.6 modem"). Modems slower than 33.6 will greatly affect your enjoyment of non-text elements (graphics, video, animation, audio) on the Web.

Nowadays, most Internet Service Providers (ISPs) support modem speeds of 56,600 bps, so you will want to have a 56K modem. If you have a DSL or cable internet connection you will need a special DSL or cable modem which can be purchased or in some cases rented from the ISP. In addition to being able to handle much greater amounts of data more quickly, DSL and cable also allow you to surf the Web without tying up your phone line.

Most newer computers come with built-in 56K dial-up modems. All you have to do is plug a phone line into the computer and voila. If you're unsure if you have an internal modem, check your manual or ask your computer support person.

Telephone Lines

Phone lines are capable of carrying information in the form of voice conversations. But they can also carry computer data, such as e-mail or Web pages, with the help of a modem. When ordering a phone line for Internet use at home, any telephone line will do – you won't need to specify that it's for Internet use. But inside your school, check with your computer support person. Some schools use telephone switching equipment, called a PBX. If your school uses a PBX, you'll need to specify a dedicated modem line – as

opposed to a normal voice line – when requesting additional lines for Internet use.

More sophisticated telephone services – such as ISDN, 56K leased lines, DSL, cable and T-1 connections – offer several simultaneous connections to the Internet at considerably faster connection speeds. These services are more expensive and may involve additional installation, hardware, and maintenance costs, but if you have the resources available, they are worth investigating.

Remember: all telephone service—including leased lines, ISDN lines and T1—that connects schools to the Internet is eligible for the E-Rate discount. ISP charges are also eligible.

Internet Service Providers (ISPs)

When selecting an Internet Service Provider, there are a few factors to consider. First, will you need access to your ISP from a variety of locations across the nation? If so, you will want to look for a provider that has "dial-up" facility (phone numbers) from a number of locations regionally and/or nationally. Most ISPs offer dial-up access via modem (most modems today are 56k) and some offer additional "high-speed" (also commonly referred to as "broadband") options like Cable Modem, DSL, T1, T3, etc. You may need additional equipment to make use of some high-speed options. The ISP can provide you with that information should you choose one of the high-speed options.

Whichever ISP you choose, you will have to load their software onto your computer. This can either be done via free CD-ROMs provided by the ISP or via a download from the Internet for which the initial call can be made using a one-time-use 800 number as you don't yet have Internet access. **Note:** Downloading this software can take a long time if you are using a 56k modem. Once you have the software, you simply follow the installation procedures.

Fee-Based ISPs

If you are looking for a basic ISP, there are a few Web sites that you can visit to search for one that suits your needs. They are as follows:

America OnLine (AOL)
www.aol.com

Compuserve
www.compuserve.com

EarthLink
www.earthlink.net/

Prodigy
www.prodigy.com

The Definitive ISP Buyer's Guide
http://thelist.internet.com

This site provides a search engine where you can search ISPs by local number/area code, monthly fee, or name.

Free ISPs

There are many companies that provide unlimited Internet access for free. Their services may also include free e-mail accounts, free space for Web hosting, and file storage places. In receiving these services for free, you will receive advertisements during your Web surfing sessions. The ads usually appear as ticker banners that run across the screen and pop-up windows.

To get started, visit the Web site and create an account with a password. You will then be required to download software from their Web site in order to get connected. Also, be sure to check system requirements to make sure the software will install successfully on your machine.

Juno
www.juno.com

Juno is currently only compatible with PC systems, but offers both a free and a fee-based option. Users of free accounts will experience advertiser banners and do not have access to the 24-7 customer support, as opposed to fee-based accounts, which have other additional benefits for $9.95 per month. There are discounts for yearly subscription.

NetZero
www.netzero.com

NetZero provides free Web access and e-mail service limited to 10 hours per month. A fee-based service with unlimited hours and no banner ads is available for $9.95 per month.

Searching the Web

At this point you should be ready to really sink your teeth into the World Wide Web. As an educator, you are probably always looking for new sources of information and the Web is the place to look! Search engines are powerful Internet tools that assist you in gathering the information you desire. Without search engines, the World Wide Web could be overwhelming for many users. Search engines organize the chaos that exists on the Web in a logical way, making it easier to use.

Before you begin a search, certain steps should be taken to make the search more fruitful. Since you are going to use keywords and phrases most of the time, clearly identify your topic and create a list of things associated with your topic. This will save time when you are online and make the search more efficient. At times, searches yield voluminous results. You will need alternative paths to follow and ways to refine your search.

Another method you may want to try before you start is to create a "Web" of words and ideas you wish to research. This is especially beneficial when working in a classroom setting or with groups. This will keep students focused on the task before they get to a computer. Once you're ready, go ahead and access the Web.

A word of caution: searching for information on the Internet can be a time-consuming process. For this reason, you may wish to locate appropriate Web sites for your students in advance and then bookmark these Web sites to enable them to save significant amounts of time. If your students are going to be doing the searching, be sure that you have refined the topic sufficiently and tried the search using keywords of your own that locate appropriate resources.

What is a Search Engine?

Search engines use special software called spiders or bots to look all over the Web for information and create indices or databases. These indices can be searched using keywords or phrases. Many provide for more advanced searches using Boolean operators or allow you to use "natural language" by simply typing a question. The search engine usually ignores the smaller connecting words

Boolean Operators

Boolean Operators are words that can be used to refine a search, such as **AND**, **OR**, or **NOT**.

AND *narrows a search* by requiring that all terms separated by **AND** be present (i.e., global warming AND forests)

OR *expands a search* by allowing the search engine to include any of the terms separated by **OR** (i.e., ethanol OR methanol).

NOT *excludes specific subsets* in a search (i.e., California cities NOT Los Angeles NOT San Francisco).

(i.e., and, the, of) and uses its own Boolean operators to conduct the search. That is why you may get listings for seemingly unrelated sites. You can usually make your searches more specific with the use of quotation marks. This will tell the engine to look only for exactly what appears within the quotes i.e. a search for "American History" on Google returns one million results, where as American History without quotes returns over three million results as it also searches for "American" and "History" separately.

Different search engines may provide different results, even using the same search criteria. This is generally due to the difference in the databases that each creates. Search engines do not all list the same Web sites. Some have more than others and some specialize in a certain type of site. Also note that not every site that a search engine turns up will be useful to you. This is because the search engines find matches to words and phrases, not content. Another red flag to look out for is out-of-date information. Many results pages will tell you when a specific Web page was last updated. Many sites contain "evergreen" information for which recent updates aren't as important, but when timely information is needed this can be a problem.

Google's current popularity stems from its easy-to-use format and its unique system of ranking pages. Google uses a system where pages are ranked higher based on the number of links they have from other sites as well as ranking the overall importance of the linking sites. Google also does not sell placement within the results whereas many search engines will allow sites to pay so that their site appears higher in the results.

Other sites, such as HotBot (www.hotbot.com), allow you to choose options like, "exact phrase," "any word" or "all words" and allow you to search for results that will include video, pictures, or audio to help narrow your search.

Examples of search engine Web sites are:

- About.com (www.about.com)
- AltaVista (www.altavista.com)
- AskJeeves (www.askjeeves.com)
- CNet Search.com (www.search.com)
- DMOZ (http://dmoz.org)

- Excite (www.excite.com)
- Go.com (www.go.com)
- Google (http://google.com)
- GoTo.com (http://goto.com)
- HotBot (www.hotbot.com)
- LookSmart (www.looksmart.com)
- Lycos (www.lycos.com)
- MSN Web Search (http://search.msn.com)
- NorthernLight (www.northernlight.com)

Some search engines have been created that focus specifically on resources for children. Generally, these sites only have links to sites that are considered safe for younger children. They also help expedite the searching process for older children. Here are a number of search engines focused for children:

- Ask Jeeves for Kids (www.ajkids.com)
- CyberSleuth (www.cybersleuth-kids.com)
- KidsClick! (http://sunsite.Berkeley.EDU/KidsClick!)
- LycosZone (www.lycoszone.com)
- Yahooligans (www.yahooligans.com)

What is a Directory?

A directory is a categorized compilation of information created by humans rather than computer programs. Although these directories can be searched by keywords, they should not be confused with search engines. Some examples of directories are:

- About (www.about.com)
- Yahoo! (www.yahoo.com)
- WebCrawler (www.Webcrawler.com)

You'll notice that many search engine sites also provide directory listings and many directories offer keyword searching. The line between these two types of tools is becoming harder to discern.

What is a Metasearch Engine?

A search engine of search engines is called a Metasearch Engine. Not only will it search its own database, it will search those of other search engines. You might want to use a metasearch engine if your topic is obscure but the search criteria is fairly simple, or if you want to find resources from several search engines and compare the results. Examples of metasearch engines include:

- Dogpile (www.dogpile.com)
- Metacrawler (www.metacrawler.com)
- ProFusion (www.profusion.com)
- Webcrawler (www.Webcrawler.com)

Note

Search Engine Watch is a comprehensive, up-to-date site with news and tips on search engines. There's information on how to conduct searches, a guide to search engines for Webmasters, and search engine status reports. You may want to check it out periodically.

www.searchenginewatch.com

Which One Should You Use?

You might want to start with a directory search when:

- You are new to searching the Web
- You haven't yet focused your search on a specific topic
- You are looking for a list of sites compiled by experts
- You want to remain within a subject hierarchy

A search engine (or metasearch engine) might be your choice when:

- You have focused on a specific topic and want an exhaustive search of that topic
- You want to combine two or more related topics
- You want to take advantage of the different indices that different search engines provide

How Do You Conduct a Search?

Determine which kind of tool will suit your search. Be specific in your choice of keyword. Use the fewest number of words to describe what you want, or only words that you are SURE describe what you are searching for. You can refine your search as you go along or before you begin. Here are some hints to help you:

- Avoid common words. Use exact phrases or less common words to avoid getting hundreds, thousands or even millions of results.
- Use quotes for phrases or names. Most search engines look for words as exact phrases if they are enclosed in quotes.
- Use capital letters for an exact match.
- Check your spelling.
- Use the "help" link to understand the idiosyncrasies of each particular search engine, directory, or metasearch engine. This is where you can discover what default Boolean operator is used and how you can best refine your search.
- Many search engines have an “Advanced Search” option where you can create very specific searches.

Resources

There are several resources on the Web that provide information about searching and tutorials to help get you started.

Sink or Swim: Internet Search Tools & Techniques
www.ouc.bc.ca/libr/connect96/search.htm

Explains the differences between search engines and subject guides (directories), shows how to formulate search strategies, and compares search engines.

Finding Information On The Internet
www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html

This excellent tutorial from the UC Berkeley Library introduces you to the Internet and World Wide Web and teaches you how to analyze a topic, choose a search tool, and use a variety of search engines.

Guide To Effective Internet Searching
http://theWebtools.com/searchgoodies/tutorial.htm

An in-depth guide to searching for both beginners and advanced users.

Each of the search engines you will use has strengths and weaknesses. Using these tools is the only way to gain experience and determine which is best for your needs. Many people favor one or two engines and use them exclusively. However, don't forget there are several out there, and just like Web sites, more are coming into existence all the time.

Downloading Resources from the Web

One of the great reasons to use the Web is the variety of resources you can access. Some of these resources are part of actual Web pages (text, images, sound, digital video), others are links to various pages, newsgroups, or mailboxes, and still others are software to be downloaded. (Frequently, the latter is inexpensive freeware or shareware.)

Capturing Images and Text

To save an image in Netscape or Internet Explorer, position the mouse over the picture and press the right mouse button (Mac users, just hold down the mouse button until a menu pops up and select "Save this Image as..." or "Download to disk."). You will then get a pop-up menu asking if you would like to save the image (most images on the Internet are in a format called "gif," "jpeg" or "bmp"). Answer "Yes." Be sure to remember which folder or subdirectory you used to save the image. If you are going to do this often, we recommend that you create a special directory or folder to save these images and store everything there so they're easier to manage.

Text can also be easily captured and utilized on your computer by:

A Highlighting the desired text;

B Clicking on "Copy" under the "Edit" command; and

C Pasting it into a text editor/word processing program (i.e., Notepad, SimpleText, or Word saved as "text-only").

It is also possible to download entire pages and save them to your hard drive or floppy disk; this will allow you to view these pages without accessing the Web or to save them to a computer that is not hooked up to the Internet (as long as that computer has browser software – Netscape or Internet Explorer – installed). It is as easy as selecting SAVE AS "Document Source" from the "FILE" menu. This downloads the "HTML" document that glues the images and text together (this is also a good way to see how Web pages are

constructed). However, to get the page to look exactly like it does when viewing it on the Web, you will need to learn a little "HTML" to find the "path" to the images for a page (images are quoted within the <IMG SRC> HTML tag). Also, you will need to download all of the images on that page to the same folder as the document source if you want to view the images. A Web page editing program may also be useful if you need some assistance getting through the HTML code.

Be mindful of copyright restrictions when downloading images, text, and document source code. Some Web pages include copyright information and authors insist on granting permission if you plan on using any of their information in your own Web page.

The Software Publishers Association
www.spa.org

This site has extensive information about copyright restriction. Educational use does not automatically give you carte blanche to use any information published on the Web.

Downloading Software

The Web is full of software for you to use: some is free (freeware), some is demonstration software for limited or unlimited use (always check to see what the policy is for education or not-for-profit use), some is commercially-produced software updates or upgrades, and some "shareware" asks you to try it out for a period and if you like it, to then send the developer a payment. While some software found on the Web is not up to commercial standards, others are quite stable, useful, and are, in some cases (Netscape, Internet Explorer, NCSA Telnet, Eudora) all of which are free for educational use.

Downloading software in Netscape and Internet Explorer has become increasingly easy. Do not be afraid of it! It is as simple as doing a search to find the application you are looking for, and clicking on it . . . almost! If you are having trouble downloading software via Netscape, it is most likely because your browser needs to be reconfigured. Your browser needs to be able to understand and translate the format of the software that you are downloading. To fix this, you will need to know more about "helper applications" or "plug-ins," small applications whose operation is coordinated by the browser. Helper applications and

plug-ins allow you to hear audio, see video, and (in the case of downloading software), "decompress" software into a format that you and your computer can use.

Note

When downloading directly from the large service providers, the service provider software usually decompresses the software automatically.

Many of the files (software or documents) you will find to download will be in a "*.zip" (PC) or "*.hqx" (Mac) format. The name of the file will end with a period and the last three letters will be a ".zip" or ".hqx" suffix. This means that these files are compressed and you will need to decompress them. For the PC, you will need the Winzip or Stuffit Expander program to decompress these files; for the Mac you will need the Stuffit Expander. Both of these programs are shareware and come with documentation. Also, both can work in conjunction with Web browsers so that the function of decompressing is transparent to the user.

Software URLs

Adobe Acrobat Reader
www.adobe.com/products/acrobat/readstep.html

Download Adobe Acrobat Reader from this page. Adobe Acrobat Reader is free, freely distributable software that lets you view and print Portable Document Format (PDF) files.

CNET.com – Shareware
http://shareware.cnet.com/

This site features over 250,000 shareware files available for downloading.

CNET.com - downloads
http://download.cnet.com/

Similar to the shareware site, this also provides access to many free software resources.

Macintosh Software Updates – Version Tracker
www.versiontracker.com/

This provides software updates/upgrades for Macintosh platform.

Macromedia
www.macromedia.com/downloads/

Download *Flash* and *Shockwave* software here, which are often necessary to view animation and other multimedia features of many Web sites.

Using the Web as a Classroom Resource Tool

Now that you have learned to navigate, search, and download resources from the Web, it is time to apply your new skills to your classroom and curricula. The real power of the World Wide Web lies in researching and accessing information, communicating, exchanging, collaborating, publishing, and global sharing. The following will help you learn about applications of the Web in the classroom as well as how to arrange interactive projects.

Educators will find that the Web is a tremendous resource for the classroom. The following sites have already been used successfully in classroom projects. Go ahead and explore some of these sites and try some projects with your own students. Remember to preview every site before you allow the students to see it, as sites do change from time to time.

Internet Starter Kit for Macintosh
www.tidbits.com/iskm

This page is a concise collection of starting points for exploring the Internet. Be sure to check out TidBITS and the Macintosh Internet Software Updates page. Extensive lessons on how to effectively search as well as how to use the found resources are available.

The Busy Teacher
www.ceismc.gatech.edu/busyt/

This site provides teachers with direct source materials, lesson plans, and classroom activities with a minimum of site-to-site linking, and provides an enjoyable and rewarding experience for the teacher who is learning to use the Internet.

K-5 Cybertrail
www.wmht.org/trail/mainlink.htm

The first leg of this tour is a micro-view of the Web. You will be shown how innovative elementary schools around the world are becoming a part of the World Wide Web with school home pages, student Web publishing, and interactive Internet projects.

Note

All Web addresses have a suffix or top-level domain/TLD (i.e., thirteen.**org**). These suffixes can be indicative of the type of content to be found on the site. Some common TLDs include:

.org	not-for-profit sites
.com	commercial sites *(often with advertising)*
.net	commercial sites *(often with advertising)*
.edu	K-12 schools and institutions of higher learning
.gov	United States government sites
.mil	United States military sites
.us	previously limited to locality-based (i.e. www.state.ny.us) groups, .us TLDs are now open to individuals, business, government, and organizations
.name	individuals
.aero	air-transport industry
.biz	businesses
.coop	cooperatives

Countries other than the US may use one of the TLDs above, their country's two-letter TLD, or a combination, i.e.:

www.nokia.fi
(Finland)

www.cadbury.co.uk
(United Kingdom)

www.guinness.com
(Ireland)

U.S. Geological Survey
www.usgs.gov/education/index.html

The US Geological Survey presents "The Learning Web," a portion of the USGS Web dedicated to K-12 education, exploration, and lifelong learning.

Frog Dissection
www.itg.lbl.gov/ITG.hm.pg.docs/Whole.Frog.html

This site provides a virtual dissection of a frog in a unique interactive way. Students can view the skeletal system, the organs, or both, if they wish. A tutorial for using the Dissection Kit can be found at www-itg.lbl.gov/ITG.hm.pg.docs/dissect/info.html.

WARNING!

www.whitehouse.**com**, rather than www.whitehouse.**gov**, is an ***extremely*** inappropriate commercial site. Be certain to double-check the Web address you are using **and its suffix** before allowing your students to access this site.

The White House
www.whitehouse.gov

Students can write to the President and Vice President of the United States using e-mail. An immediate response is received from the White House as a form letter. Students receive an official personalized letter written by President George W. Bush, along with a color photograph and educational material a month later.

NASA
www.nasa.gov/today/index.html

Check this Web site regularly to learn about news in space and flight schedules (a must-see site for science teachers).

NASA K-12 Internet Initiative
http://quest.arc.nasa.gov

Interactions between students and working professionals can be tricky to establish and maintain, and it may not be clear how to integrate them into an existing curriculum. That's why the NASA K-12 Internet Initiative has always made it a top priority to develop such programs and offer them "out of the box and ready to go" to classrooms around the world.

These projects, called "Sharing NASA," allow students to share in some of the excitement of authentic scientific and engineering pursuits like high-altitude astronomy, Antarctic biology, and robotics. These are full multimedia experiences, making use of television broadcasts and videotapes, printed workbooks, and offering online interaction over the Internet. Projects usually last from one to three months and are open to any teacher or student.

Weather
www.intellicast.com/

Classes can download and view satellite weather maps showing precipitation, temperature, wind, and other weather-related information. Students can then compare the temperature in different parts of the US and the world.

Making Your Own Newspaper
http://crayon.net

Students can use this great Web page, entitled CRAYON (CReate Your Own Newspaper), to put together a customized electronic newspaper. This site is unique in that it is automatically updated every time it is accessed. Current events, sports, weather, technology, and national and international news are always at your fingertips.

Note

Make sure you preview this site because there may be inappropriate links for your students; however, the links generally seem fine.

Virtual Trip to Antarctica
http://quest.arc.nasa.gov/livefrom/livefrom.html

Students can follow virtual scientific expeditions to Antarctica, complete with images and lots of interesting information.

The Franklin Institute Museum
http://sln.fi.edu

Students can visit the Franklin Institute in Philadelphia via the Web and find research information on the heart and other topics.

Math Magic
http://mathforum.com/mathmagic

This is a great site for mathematics teaching. Math Magic is a K-12 telecommunications project that provides strong motivation for students to use computer technology while increasing problem-solving strategies and communications skills.

Math Forum Teacher's Place K-12
http://mathforum.com/teachers

An extension of the Swarthmore math site listed above where you will find various topics on mathematics and lesson plans for K-12 math classrooms.

Classroom Connect Quest Series
http://quest.classroom.com/welcome.asp

Twice a year, Classroom Connect sends a team of experts on bicycles on a Quest to unravel some of the greatest mysteries of all time. This site features CD-ROM versions of past Quests in Asia, Africa, Maya, America, and the Galapagos Islands.

CyberKids Kids Connect
www.cyberkids.com/kc

CyberKids Kids Connect is a virtual place for kids to share their thoughts and ideas with each other. CyberKids readers from all over the world are forming a global community with the aim of improving communication and understanding among all the world's kids. Besides pursuing such lofty goals, what else can you do in CyberKids Kids Connect?

- Write anything you like that's not offensive and see it added to the comments page.
- Tell what you like or dislike about CyberKids and give suggestions to make it better.
- Find a keypal or penpal (introduce yourself by telling what makes you special).
- Discuss the stories, articles, art, or puzzles you've seen on CyberKids.
- Express your creativity: fire off a haiku, leave a limerick, shout a sonnet, or spin a fairy tale.

Solar System Live
www.fourmilab.ch/solar/solar.html

At this site, students and teachers can view a graphic simulation of the entire solar system or just the inner planets (through the orbit of Mars). Controls allow you to set time, date, viewpoint, observation location, orbital elements to track an asteroid or comet, and a variety of other parameters.

KidLink
www.kidlink.org

Kids-96 is a grassroots project aimed at getting as many children in the age group 10-15 as possible involved in a GLOBAL dialogue. KidLink is the name of the organization that runs the yearly KIDS projects.

Encyclopedia Britannica Online
www.eb.com

The Encyclopedia Britannica Online offers advanced search capabilities and hypertext linking via the Web. The Britannica Browser contains a full encyclopedic database, Merriam-Webster's Collegiate Dictionary, the Britannica Book of the Year, and more. Visitors may try the site, but users who wish to make regular searches must pay a fee.

Exploratorium
www.exploratorium.edu

The Exploratorium is a hands-on, interactive science museum in San Francisco, CA. Its Web site is a collage of hundreds of interactive exhibits in science, art, and human perception. Students can explore many of them via this site. The exhibits fall into thirteen broad subject areas, including light, color, music, motion, animal behavior, electricity, heat and temperature, language patterns, hearing, touch, vision, waves, and resonance.

Hurricane Storm Science
www.miamisci.org/hurricane

This site was developed with elementary education in mind. Students and teachers can learn about how hurricanes form and learn about weather instruments.

Science Bytes
http://pr.utk.edu/ut2kids/default.htm

Science Bytes is designed for elementary and secondary school students and teachers. Each installment describes the work done by scientists at the University of Tennessee. The developers of the site are attempting to educate teachers and students about current science questions and issues, as well as inspire them to pursue new questions and exciting projects in the classroom.

Virtual Tourist
www.virtualtourist.com

Click anywhere on this interactive world map and you will be instantly transported to a large collection of online sites located in that continent, country, city, or town.

Visible Human Project
www.nlm.nih.gov/research/visible/visible_human.html

The Visible Human Project has created a complete, anatomically detailed, three-dimensional representation of the male and female human body. The project involves collecting CAT, MRI, and "cryosection" images of a male and female cadaver at one millimeter intervals. www.nih.gov is also a good source of current data on topics such as teen smoking rates, diseases, etc.

American Memory Collection
http://lcWeb2.loc.gov/ammem/amhome.html

The American Memory Collection at the Library of Congress has one of the most extensive collections of US historical documents. View actual historical documents. Over 70 collections are now online and searchable.

Corbis
www.corbis.com

One of several places for pictures on the Web. The site is a searchable index of images and prints.

Ditto
http://ditto.com

Another searchable site devoted to images. You can browse their categories for any image you may want.

Creating a Web Page

Creating a Web page is getting easier as more Web page text editors, also known as "WYSIWYG" (what-you-see-is-what-you-get) software, has become available. Applications such as Claris Home Page, Macromedia Dreamweaver, Adobe GoLive!, and others make creating Web pages without HTML simpler than ever. While each of these programs will enable you to create Web pages easily, there is still a fair amount of time needed to master the program itself; in short, it still takes time and effort to easily publish on the Web. However, there are several Web sites that allow you to publish Web pages using online “wizard” tools and even provide server space free of charge. Some free sites include:

Angelfire
http://geocities.yahoo.com/home

The Express Page
www.expage.com

Tripod
www.tripod.lycos.com

Yahoo!
http://geocities.yahoo.com/home

In addition to sites like Tripod and Yahoo!, many Internet Service Providers offer members server space and support for the creation of Web sites; AOL, AT&T WorldNet and Earthlink are three providers of such services for members making the creation of Web pages much easier than ever before.

Another new development in the field is the launching of many new startup ventures that promise to develop and host a school Web site in exchange for advertising and promotion. In addition, many Internet portals such as Yahoo! and About.com offer Web creation tools online, usually with the stipulation that the pages contain advertising banners.

Even with all of these options, it is still valuable to learn how to build Web pages using HTML, the basic "language" used to create Web pages. The following is a brief introduction to HTML to get you started.

What Is Hypertext?

The term hypertext was coined by Ted Nelson to describe nonlinear writing that follows associated paths in a document. The World Wide Web is a collection of hypertext documents. The paths that you follow within a document are usually called hypertext links, or simply links. Each link can take you to other parts of a document or to other sites, giving you a great deal of flexibility in creating a Web page.

What Is HTML?

HTML stands for **H**yper**T**ext **M**arkup **L**anguage. Web pages are written using HTML. HTML encodes hypertext using a system of simple formatting codes called tags. Documents written in HTML can be transferred online from one computer to another.

How Do You Create a Web Page?

There are two ways to create a Web page. One way is to use a text editor and start from a blank document. When you use this method, you must enter all the tags (HTML commands) yourself. The other way to create a page is by using a Web page text editor (WYSIWYG) that supplies a template and will help place additional tags when necessary. The downfall to using a Web page text editor (i.e., GoLive, Dreamweaver, Claris HomePage, or Netscape Communicator), is that it may insert commands or coding that your ISP's server does not understand, causing your Web page to not appear. In either case, it is a good idea to look at other pages on the Web and think about how you would like to lay out your own. After all, if it is a good page, people from all over the world may want to see it.

Using SimpleText to Create a Web Page

Since HTML is written in ASCII (text-only), software such as MicrosoftWord, Word Pad, Mac SimpleText, or UNIX Emacs can be used to create a Web page. Using these programs to create your Web page requires knowing a few simple HTML commands referred to as "tags."

The following is an HTML primer to assist you by providing a simple template to follow for creating your own page.

<HTML> and **</HTML>** are the first and the last tags, respectively, that you need to use. This defines your file as an HTML document. Most tags are paired or "closed," meaning that one tag begins the action and another tag ends the action. The ending tag is the same as the opening tag, with a "/" before the action code. HTML documents are comprised of two parts: the head and the body.

The **<HEAD>** tag indicates your document heading. The material in the head of the document is not usually seen by the reader, but contains important information.

Note that **<HEAD>** is placed between the **<HTML>** tags and must be closed **(</HEAD>**). The **<TITLE>** tag encloses the name of the document. This title will be seen on the title bar of the reader's browser. Every head includes a title. Again, this text will not be displayed on the page, but on the title bar. Closure required (CR).

The **<BODY>** tag indicates this is the main part of your page. It is placed after the heading (CR). The font size will be defaulted to a specific size, which can be changed.

The **<H1>** is used to add a "Heading 1" to the body of your Web page. This text will appear in a bigger default font size than your **<BODY>** default font size (CR).

To separate paragraphs with a double space use a **<P>** tag at the end of each paragraph. Otherwise, your text will run on as one giant paragraph. Note that the **<P>** tag does not require closure (NCR).

To provide a single line break, use the tag **
**. (NCR)

How to Add a Link to Your Page

Have you found a great site and do you want to share it with the world? It's easy! A link has five parts. The first part is the start of the anchor tag, **<A**, which begins the hypertext link to your Web page. The second part is **HREF=**, which stands for hypertext reference. The third part is the Web address, or URL, of the site to which you want to link, which must be placed in quotation marks and followed by **>** (**"http://thirteen.org">**).

The Five Components of a Link

1 <A

2 <A HREF=

3 <A HREF= “http://thirteen.org”>

4 <A HREF= “http://thirteen.org”> Thirteen/WNET New York

5 <A HREF= “http://thirteen.org”> Thirteen/WNET New York </A>

Next, enter the text you want the Web page to show as the link to the site ("Thirteen/WNET New York" would appear on the page rather than the link itself, "http://thirteen.org").

On your Web page, only the following will appear (typically in blue and underlined to indicate a hypertext link): **Thirteen/WNET New York**.

Finally, the link must be closed with **<A/>**. The entire link will read: **<A HREF= “http://thirteen.org”> Thirteen/WNET New York </A>**

The Three Components of an Image Tag

1 <IMG SRC=

2 <IMG SRC=”thirteen.jpg”

3 <IMG SRC=”thirteen.jpg”>

Now see your work!

How to Add an Image to Your Page

It's important to know that in order for an image file to be viewed on a Web page, it is best to save it in either "gif" or "jpeg" format (**thirteen.gif** or **thirteen.jpg**). It also should be saved in the same folder as the text document you create for your Web page. However, it is not enough to simply add the suffix to the end of the image file name. The file must be properly formatted in order to be “Web-friendly.”

To add an image to your page, use the tag format:

<IMG SRC="filename.jpg">

For example, if you have an image saved as "thirteen.jpg" and you wish to include the image on your Web page, the format would be **<IMG SRC="thirteen.jpg">**. (Note that the **<IMG SRC>** tag does not require closure.)

Note

This file will not yet be available on the Internet. It can only be viewed on your local computer through access to your hard drive until you have uploaded it to your site through your ISP.

Previewing Your Web Page

To see your finished document as it will appear on the Web, you must first save it as text-only file with the extension "**.html**" or “**.htm**.” (Most current versions of MicrosoftWord allow you to choose "Save As HTML" from File on the Menu Bar.) Next, open your browser (Netscape or Internet Explorer) and go to "Open Page" or "Open File." You can now open your saved HTML document through your Web browser. It should appear with the tags invisible.

Resources on the Web

www.union-city.k12.nj.us
Click on "Intranet" and then on "An HTML Primer." This will show you the most common HTML tags used to create a Web page.

www.utoronto.ca/Webdocs/HTMLdocs/pc_tools.html
PC HTML Editors

www.utoronto.ca/Webdocs/HTMLdocs/mac_tools.html
Mac HTML Editors

Getting It from the Source

The source document is the original document you create with all of the HTML tags visible. It's easy to see how other people have constructed their pages. Most Web browsers have a "view" option on their menu bar. Use it to select the menu option "Page Source" or "Document Source." You will see the original HTML text for the site you are viewing, with all tags visible. This will give you hints on how to create or improve your own Web page. Viewing the source code of other Web sites is perhaps the best way to learn HTML. Keep in mind that while someone else may view your page in this way, they cannot change your page. Your page(s) can only be changed by you, those you haven given access to your files, and by the ISP that hosts your page.

Additional Tags

To size header text, use a range from **<H1>** to **<H6>**:

- **<H1>**large text**</H1>**
- **<H6>**small text**</H6>**

To create a space between lines:

- **
**

To create a horizontal line across the document:

- **<HR>**

Tips for Creating Web Pages

When Saving an HTML File:

- File names should not contain any spaces (use_underscores instead_of_spaces)
- Use only alphanumeric characters (no symbols: %$#-*@)
- File names should be in LOWER case
- Put the suffix ".html" after each file name (i.e. index.html)
- Main pages should be called "index.html"

When Using Image Files in HTML:

- File names should not contain any spaces
- Use only alphanumeric characters
- File names should be in LOWER case
- Files are best saved in the "gif" or "jpeg" format
- Files should have a name and a suffix (i.e. cartoon.gif)
- Files should be saved in the same folder as the HTML files, or a folder within the HTML files.

To create bold text in the body of the document:

- **<B> </B>**

To create italic text in the body of the document:

- **<I> </I>**

To create blinking text in the body of the document:

- **<BLINK> </BLINK>**

To create centered text in the body of the document:

- **<CENTER> </CENTER>**

To create text in the body of the document that is larger than the surrounding text:

- **<BIG> </BIG>**

To create text in the body of the document that is smaller than the surrounding text:

- **<SMALL> </SMALL>**

To makes text superscript:

- ****

To indent a paragraph 5 spaces on each side:

- **<BLOCKQUOTE> </BLOCKQUOTE>**

To link your Web page to your e-mail address so your viewers can send comments:

- **<MAILTO:"your e-mail address goes here">Send Me Comments</A>**

To embed a music file into your Web page that starts when the page is opened and plays continuously:

- **<EMBED SRC="filename.midi" AUTOSTART="TRUE" LOOP="INFINITE">**

To embed a movie file into your Web page that starts when the page is opened or the file is downloaded:

- **<EMBED SRC="filename.avi" WIDTH=100 HEIGHT=100 AUTOSTART="TRUE" ALIGN="CENTER">**

To change the background of your Web page to an image:

- **<BODY BACKGROUND="filename.gif">**

Online HTML Guidebooks

The Bare Bones Guide To HTML
www.werbach.com/barebones

A Beginner's Guide to HTML
www.ncsa.uiuc.edu/General/Internet/WWW/index.html

WebMonkey
www.Webmonkey.com

References

Brown, Mark R. *Special Edition: Using Netscape 2*. Que Corporation, Indianapolis, IN, 1995.

Castro, Elizabeth, *HTML for the World Wide Web*. 2nd Edition, Peachpit Press, Berkeley, CA 94710, 1997.

Engst, Adam C. *Internet Starter Kit*. Hayden Books, a division of Macmillan Computer Publishing, Indianapolis, IN, 1994.

Acceptable Use Policy

Internet users are Internet citizens. As a NETcitizen, you are part of global communications and transactions, unprecedented activities, and a growing community. The Internet gives you power, but the rest is up to you. Gaining power changes how you perceive your capabilities. Gaining power equals responsibility. As the World Wide Web is becoming an integral classroom resource, students and teachers alike are expected to be responsible Internet users. Though an abundance of useful classroom material may be found on the Web, controversial material does exist. In order to instill a sense of ethics and responsibility in each student and teacher, many schools generate an Acceptable Use Policy prior to granting Internet access. The policy is generally given to every potential user in the school to sign, and schools will often ask a parent or guardian to co-sign with a student. In the following pages are two examples of Acceptable Use Policies – a generic policy that your school may adapt, and an existing policy currently used by the Union City School District in New Jersey.

[Name of School] provides students and teachers full access to the Internet. The access is being offered via [Name of Service Provider]. Our goal in providing this service to teachers and students is to promote educational excellence by facilitating resource sharing, innovation, and communication. The Internet is an electronic highway connecting thousands of computers all over the world and millions of individual subscribers. Students and teachers have access to:

- Electronic mail communication with people all over the world;
- Information and news from national and international resources, including colleges, universities, businesses, governmental and national agencies and organizations;
- Public domain and shareware software of all types;
- Discussion groups on a plethora of topics ranging from Chinese culture to the environment to music to politics.

Along with access to computers and people all over the world comes the availability of material that may not be considered to be of educational value in the context of the school setting. It is important to keep in mind that on a global network it is impossible to control all materials, and an industrious user may discover controversial information. We at [Name of School] firmly believe that the valuable information and interaction available on the Internet far outweighs the possibility that users may procure material that is not consistent with educational goals.

Internet access is coordinated through a complex association of government agencies and regional and state networks. In addition, the smooth operation of the network relies upon the proper conduct of the end users who must adhere to strict guidelines. These guidelines are provided here so that users are aware of the responsibilities acquired by using the network. In general this requires efficient ethical and legal utilization of the network resources. If a user violates any of these provisions, his or her account could be terminated and future access denied.

Terms and Conditions

1 **Acceptable Use** The purpose of NSFNET, which is the backbone network to the Internet, is to support research and education in and among academic institutions in the U.S. by providing access to unique resources and the opportunity for collaborative work. Use of the Internet must conform to this directive. Transmission of any material in violation of any U.S. or state regulation is prohibited. This includes, but is not limited to: copyrighted material, threatening or obscene material, or material protected by trade secret. Illegal activities are strictly prohibited.

2 **Privileges** The use of the Internet is a privilege, not a right, and inappropriate use will result in a cancellation of that privilege. Based upon the acceptable use guidelines outlined in this document, the [Name of School] will deem what is inappropriate use and may close an account at any time. The school's decision will be final.

3 **Netiquette** All users are expected to abide by the generally accepted rules of network etiquette. These include (but are not limited to) the following:

- Be polite. Do not write or send abusive messages to others;
- Use appropriate language. Do not swear, use vulgarities, or use any other inappropriate language;
- Do not reveal your personal contact information, including address, phone numbers, or email address, or those of students or colleagues;
- Note that electronic mail (e-mail) is not guaranteed to be private. People who operate the system do have access to all mail. [Name of School] respects the privacy of all users; however, in the event of suspect usage, messages relating to or in support of illegal activities may be reported to the appropriate authorities;
- Do not use the network in such a way that you would disrupt the use of the network by other users (e.g. downloading huge files during primetime, sending mass e-mail messages, annoying other users using the talk or write functions). All communications and information accessible via the network should be assumed to be private property.

4 **Reliability** [Name of Service Provider] makes no warranties of any kind, whether expressed or implied, for the service it is providing. [Name of School] will not be responsible for any damages suffered. This includes loss of data resulting from delays, non-deliveries, misdeliveries, or service interruptions caused by its own negligence or your errors or omissions. Use of any information obtained via the Internet is at your own risk. [Name of School] specifically denies any responsibility for the accuracy or quality of information obtained through its services.

5 **Security** Security on any computer system is a high priority, especially when the system involves many users. If you feel you can identify a security problem, you must notify a system administrator. Do not demonstrate the problem to other users. Do not give your password to any other individual. Attempts to log in to the system as any other user, or to share login codes and passwords, will result in cancellation of user privileges. User accounts, except in the case of classroom accounts, are not intended to be shared with other individuals.

Any user identified as a security risk or having a history of problems with other computer systems may be denied access to the Internet.

6 **Vandalism** Vandalism will result in cancellation of privileges. Vandalism is defined as any malicious attempt to harm or destroy data of another user, or of the NSFNet Internet backbone. This includes, but is not limited to, the uploading or creation of computer viruses.

These terms and conditions shall reflect the agreement of [Name of School] *and its users. In using the Internet, users agree to accept and abide by all of the conditions outlined below.*

Student Name (print)_____

I understand and will abide by the Acceptable Use Policy Agreement. I further understand that any violation of the regulations above is unethical and may constitute a criminal offense. Should I commit any violation, my access privileges may be revoked, and school disciplinary action and/or appropriate legal action may be taken.

Student User Signature _____

Date _____

(If you are under the age of 18 a parent or guardian must also read and sign this agreement.)

Parent or Guardian Name (print) _____

As the parent or guardian of this student, I have read the Acceptable Use Policy. I understand that this access is designed for educational purposes. I recognize that it is impossible for the school to restrict access to all controversial materials and I will not hold them responsible for materials acquired on the network. I hereby give permission for my child to use the Internet at [Name of School]. I certify that the information contained on this form is correct.

Parent or Guardian Signature _____

Date _____

Union City Board of Education

Online Services Use Agreement Policy

This policy is to be distributed to all staff yearly as a general bulletin. Copies of this policy are to be posted in all computer labs, classrooms, and media centers. All staff members using computers as part of any program are to review this policy with their classes. Students shall be provided with a copy of this policy.

Online Services Use Agreement

Policy Online Services access is now available to students and teachers in the schools using the Internet, America Online, and/or Bell Atlantic's Project Explore Network. We believe these Online Services offer vast, diverse, and unique resources to both students and teachers. Our goal in providing this service to students and teachers is to promote educational excellence in schools by facilitating resource sharing, innovation, and communication. Online Services provide access to an electronic highway connecting thousands of computers all over the world and millions of individual subscribers. Students and teachers have access to:

1. Electronic mail communication with people all over the world;
2. Information and news from NASA as well as the opportunity to correspond with the scientists at NASA and other research institutions;
3. Public domain software and shareware of all types;
4. Discussion groups on a plethora of topics ranging from Chinese culture to the environment to music to politics;
5. Access to many University Library Catalogs, the Library of Congress, and Online Services worldwide.

Along with access to computers and people all over the world comes the availability of material that may not be considered to be of educational value in the context of the school setting. On a global network it is impossible to control all materials that an industrious user may discover, including controversial information. We [Union City School District] believe that the valuable information and interaction available on this worldwide network far outweighs the possibility that users may procure material that is not consistent with the educational goals of the District.

These Online Services work through a complex association of government agencies and regional and state networks. In addition, the smooth operation of the network relies upon the proper conduct of the end users, who must adhere to strict guidelines. These guidelines are provided here so that you are aware of the responsibilities you have in using these services. In general, this requires efficient ethical and legal utilization of the network resources. If any user violates any of these provisions, future access could possibly be denied.

Online Services - Terms and Conditions:

1 **Acceptable Use** The purpose of NSFNET, which is the backbone network to the Online Services, is to support research and education in and among academic institutions in the US by providing access to unique resources and the opportunity for collaborative work. The use of these Online Services must be in support of education and research and consistent with the educational objectives of the Union City School District. Use of other organization's network or computing resources must comply with the rules appropriate for that network. Transmission of any material in violation of any US or state regulation is prohibited. This includes, but is not limited to: copyrighted material, threatening or obscene material, or material protected by trade secret. Use for commercial activities is generally not acceptable. Use for product advertisement or political lobbying is also prohibited.

2 **Privileges** Use of Online Services is a privilege, not a right, and inappropriate use will result in a cancellation of that privilege. The system administrators will deem what is inappropriate use and their decision is final. Also, the system administrators may close an account at any time as required. The administrators, faculty, and staff of Union City School District may request the system administrator to deny, revoke, or suspend specific user access.

3 **Netiquette** You are expected to abide by the generally accepted rules of network etiquette. These include (but are not limited to) the following:

a Be polite. Do not get abusive in your messages to others;

b Use appropriate language. Do not swear, use vulgarities or any other inappropriate language. Illegal activities are strictly forbidden;

c Do not reveal the personal address or phone number of self, students, or colleagues;

d Note that electronic mail (e-mail) is not guaranteed to be private. People who operate the system do have access to all mail. Messages relating to or in support of illegal activities may be reported to the authorities;

e Do not use the network in such a way that you would disrupt the use of the network by other users;

f All communications and information accessible via the network should be assumed to be private property.

4 The Union City School District makes no warranties of any kind, whether expressed or implied, for the service it is providing. The Union City School District will not be responsible for any damages you suffer. This includes loss of data resulting from delays, nondeliveries, misdeliveries, or service interruptions caused by its own negligence or your errors or omissions. Use of any information obtained via the Online Services is at your own risk. Union City School District specifically denies any responsibility for the accuracy or quality of information obtained through its services.

5 **Security** Security on any computer system is a high priority, especially when the system involves many users. If you feel you can identify a security problem with the Online Services, you must notify a system administrator or the Supervisor of Computer Operations. Any user identified as a security risk or having a history of problems with other computer systems may be denied access to Online Services.

6 **Vandalism** Vandalism will result in cancellation of privileges. Vandalism is defined as any malicious attempt to harm or destroy data of another user, Online Services, or any of the above listed agencies or other networks that are connected to any Online Service. This includes, but is not limited to, the uploading or creation of computer viruses.

Violations of the regulations above are unethical and may constitute a criminal offense. Violations may result in access privileges being revoked and school disciplinary and/or appropriate legal action may be taken.

In addition to the previous policies, the following Web site offers more examples and information on this subject:

Acceptable Use Policies
www.tenet.edu

This site provides a variety of links that may be helpful to K-12 educators interested in establishing Acceptable Use Policies for their own organizations.

Internet Glossary

Access Provider (or ISP, Internet Service Provider) A company that provides Internet access to its customers. The customer's modem dials a phone number at the provider's location to make the connection. The provider's fee is usually a flat monthly rate.

ActiveX A program used to create interactive content for World Wide Web sites. It was created by Microsoft as a competitor to Java, an extremely popular programming language from Sun Microsystems.

Adobe Acrobat Acrobat is a file reader program that uses a format called PDF (Portable Document Format) which will display and print a document with the same formatting, layout, graphics, and fonts used by the creator. The PDF can be viewed on a wide variety of different computer platforms, but cannot be altered.

ADSL (Asymmetric Digital Subscriber Line) A new type of data communication which will deliver and receive information on the current telephone lines at a much greater speed. The Asymmetric part of the name means downloading occurs faster than uploading, so this will be particularly useful for Web browsing, since the flow is mostly one way to the user.

Analog Modem An analog modem communicates over regular telephone lines by converting computer (digital) data into sound. At the receiving end, the data must then be converted back to digital. The speed of the analog modem is very slow compared to digital modems.

Animated GIF Animated GIFs allow a series of images to be displayed one after another or on top of each other, displaying a simple type of animation. The advantage of animated GIFs over other animation programs for Web pages is that the user needs nothing extra besides his browser to see the animation.

ASCII (Stands for "American Standard Code for Information Interchange" and is pronounced "as-key") A system of representing text by numbers that enables various computers to display the text in a uniform way.

Attachment A file that is sent along with an e-mail message, rather than as a part of the message itself. This could be a large text file that you don't want to retype in the e-mail message, or a graphic, picture, sound, or video clip.

Beta Version A version of a piece of software that is available to select users for test use before the actual release of the software to the public. Beta versions are often available for download from World Wide Web sites, but often still have "bugs" to be worked out.

Bitmap A graphic image formed by a pattern of pixels or dots. Some bitmap formats are GIF, JPEG, TIFF, BMP, and PICT. Graphic images on Web pages are bitmaps.

Broadband A high-speed, high-capacity transmission channel. Broadband channels are carried on coaxial or fiber-optic cables that have a wider bandwidth than conventional telephone lines, giving them the ability to carry video, voice, and data simultaneously. DSL, cable, T1 and T3 are all forms of broadband. Transmission rates are listed in bits-per-second (bps) and range from DSL service at 128K bps to T3 lines at 45000K bps (45M bps).

Cache (or Disk Cache) A temporary storage area on a computer to keep data available. Web browser software keeps a certain number of Web pages that you've accessed in a cache so when you return to them they don't have to reload from over the Internet.

CGI (Common Gateway Interface) A form of script programming used on Web sites to permit clickable image maps, filling out forms, and data searching.

Chat (also see "IM") Instant online communication in an area of the Internet known as the IRC (Internet Relay Chat). Two people "chat" by typing messages that appear on each other's computer screens as soon as they are typed and the ENTER key is pressed. Multiple users can chat together in organized areas known as chat channels or rooms.

Chat Forum An area devoted to a specific topic on an Online Service or BBS.

Client The concept of "client" and "server" is one of the key building blocks of the Internet. A client is a software program used to contact and obtain data from a server program located on another computer. The terms have also come to mean the computers themselves.

Content Provider A business that uses the Internet to supply you with information such as news, weather, business reports, and entertainment.

Cookie These are data files that let Web site operators and advertisers record the trail of sites that a person visits during a Web session as well as online purchases and transactions. The files are stored on the user's computer without his knowledge. The cookie enables the site to recognize you when you return by "branding" your browser with an electronic serial number.

Cross-Platform Works on any platform (Mac or PC). The Internet is cross-platform, while a piece of software, such as Excel or WordPerfect, is not. If you own the Windows version, it won't work on the Macintosh platform.

Cyberspace William Gibson coined the term in his novel Neuromancer. These days it refers to the whole range of computers, networks, people, and information connected via the Internet.

Dedicated Line A type of account available from an Internet Service Provider where the customer, usually a business, is connected to the Internet 24 hours a day on its own individual phone line. Another type of account is a dial-up account, where a customer is connected to the Internet only when his modem dials the ISP's number to make a connection.

Dial-up Account A type of account available from an Internet service provider where the customer connects to the Internet when his modem dials the provider's number. Another type of account is a dedicated line, often used by businesses, which provides a 24-hour connection.

Digital Modem A digital modem communicates computer (digital) data directly without having to convert it as an analog modem does and is much faster than an analog modem. It uses a special digital phone line called an ISDN line.

Domain Name A unique name which identifies an Web site.

DSL (Digital Subscriber Line) A new type of data communication which will deliver and receive information on the current telephone lines at a much greater speed. Only available in a few areas so far.

Emoticon (Also known as Smileys) Faces made using keyboard symbols to liven up e-mail messages, IM, IRC chats, and Usenet newsgroup postings.

Ethernet A very common method of networking computers in a LAN. Ethernet will handle about 10,000,000 bits-per-second and can be used with almost any kind of computer.

Firewall A security system that stands between a local network and the Internet to prevent potentially damaging direct access to internal systems.

Flame Derogatory comments communicated on the Internet, particularly in Usenet newsgroups. When a discussion degenerates into a series of personal attacks, it is known as a flame war.

Flash One of the most commonly used software programs to develop animation for Web sites (see **Shockwave**). Often required to view sites with animation.

Frames A layout style of a Web page, which permits different content to appear on separate areas of the page so that an index can remain stationary while different content appears in another part or frame of the page. This has become a very popular method of presenting pages, particularly since the current versions of both the major browsers, Microsoft Internet Explorer and Netscape Navigator, display frames properly.

GIF A file format for graphics (pictures) widely used on the Internet to put images in Web pages. (Most people pronounce it "jif," like the peanut butter though it may also be pronounced with a hard "g".) Different types include animated GIFs, interlaced GIFs, and transparent GIFs.

Hit A term used to describe the accessing of a Web page. Even though figures are tossed around of number of hits as proof of the popularity of sites, a hit is not an accurate measurement of traffic

to a site because different pages may require the browser to "hit" several times to bring the page in.

IM (Internet Messenger) Chat systems set up by ISP providers to allow members to talk to one another instantaneously while online via small pop-up windows. Users can keep a list of friends with whom they regularly chat. Very popular with kids.

Image Map A picture or graphic on a Web page that has been coded with HTML so that you can click on various parts of the picture and be linked to different pages.

Interlaced GIF Interlaced GIFs allow the entire image to appear quickly in the browser with just a few pixels and then improve in resolution until the entire image has arrived. This gives the viewer a quick idea of what the entire image will look like while waiting for the rest.

InterNIC (Internet Network Information Center) The organization that keeps track of and issues new domain names.

Intranet Internal networks for companies, based on the same technology as the Internet, rather than traditional and much more complicated Local Area Network software, or LANs.

IP Address A unique identification for every computer on the Internet in the form of four sets of numbers separated by dots. (Example: 258.138.252.18) Another form of identification in words is the domain name.

IRC (Internet Relay Chat) A section of the Internet where users can "chat" with others by typing messages which appear on the monitors of other users as soon as they are sent. Anyone can create a channel which is a private area for a chat. Messages can be sent one-on-one to another user or broadcast to everyone in the channel.

ISDN (Integrated Services Digital Network) ISDN is a phone line that moves data digitally, a much faster way of transmitting than via traditional analog phone lines and modems. ISDN is rapidly becoming available to much of the US, and in most markets it is priced very comparably to standard analog phone circuits. It can provide speeds of roughly 128,000 bits-per-second. In practice, most people will be limited to 56,000 or 64,000 bits-per-second. Phone companies are currently rushing to install ISDN lines which

will substantially reduce access times for Web pages and download times for FTP files.

Javascript A scripting language for Web pages which makes it easy to add interactivity to Web pages.

JPEG (Joint Photographic Experts Group) A type of graphics format that provides generally better quality than GIF images, but consists of more data, so takes more time to load on a Web page.

Link (also called a 'hyperlink') Part of a Web page (text or graphics) that has been coded using hypertext so that when a user clicks on the link with the mouse, a new Web page is displayed.

Login The name of your account used to access a computer system, such as your Internet Service Provider. Usually used in combination with a password, which you choose, and which is replaced by asterisks when you type it on the screen so as not to be visible to anyone else. Another name for a login is a "userid."

Mailing List A list of users who will receive copies of information on a particular topic which is distributed periodically by e-mail. Mail server software, such as Listserv, receives contributions and distributes them to all subscribers.

MIDI (Musical Instrument Digital Interface) A protocol for data exchange between music synthesizers and computers. ".mid" is the file extension that identifies a MIDI file. Increasingly, ".mid" files are being used in Web pages as they tend to be smaller than recordings of actual instruments. However, the artificial sound of MIDI is not uniformly popular.

MIME (Multipurpose Internet Mail Extension) A way of attaching files, including non-text files such as graphics, spreadsheets, or sound to e-mail messages.

MP3 This new type of MPEG (Layer 3) sets a new standard for audio compression, capable of 10:1 compression with no noticeable loss in quality. The only disadvantage to this format is that MP3 needs to be decoded while it is being played back. This is done with a player such as WinAmp, or Winplay3 and requires a fairly powerful computer, such as a Pentium 100 processor, with at least 16 megabytes of RAM. With an older, slower machine, MP3s can still be played but at reduced quality.

MPEG (Motion Picture Experts Group)A standard for compressing sound and movie files into an attractive format for downloading or even streaming over the Internet. MPEG files are usually smaller than QuickTime or Video for Windows files, though the quality isn't always as good.

Multimedia Literally, the use of more than one medium in transmitting information. In the computer world, multimedia refers to the use of any combination of text, full color images and graphics, video, animation, and sound.

Netiquette A set of generally accepted, but unwritten, standards of considerate Internet behavior that have developed through repeated usage.

Offline Not connected to a network or the Internet.

Offline Reading Viewing a Web page without being connected to the Internet. You can download the page to your hard drive, disconnect from a network or the Internet, and read the material later.

Online Service A company that maintains its own network of information, forums, games, files, and services, which charge a monthly fee and (sometimes) an hourly rate for Internet access. The major online services are America Online, CompuServe, and the Microsoft Network.

Password A secret code used to gain access to a computer system, usually used in conjunction with a login.

PDF (Portable Document Format) is used by Adobe Acrobat to permit viewing of a document on a wide variety of computer platforms while retaining the formatting, layout, graphics and fonts used by the creator.

Plug-in A program, usually shareware, that adds functions to a browser, such as sound players, video players, and compression utilities. A plug-in is set up within the browser so that its functions occur right in the browser.

QuickTime Developed by Apple Computer but no longer limited to just the Macintosh, QuickTime is a method of storing sound, graphics, and movie files. The file extension that identifies a QuickTime file is ".mov."

RealAudio Software from Progressive Networks that provides live audio over the Web using a technology called streaming.

RealPlayer The vehicle through which a user can play RealAudio and RealVideo files within their browser. It is available for free download from Progressive Networks' Web site, www.real.com.

RealVideo Software from Progressive Networks that provides live video over the Web using a technology called streaming.

Shockwave A plug-in which plays multimedia files created with various products from Macromedia to be viewed in a browser. Shockwave dramatically compresses the file so that it loads quickly and uses streaming technology so that the user can see and hear what's happening as soon as the page begins loading rather than waiting for the whole file to come in before anything happens.

SMTP (Simple Mail Transfer Protocol) - The main protocol used to send electronic mail on the Internet. SMTP consists of a set of rules for how a program sending mail and a program receiving mail should interact. Almost all e-mail is sent and received by clients and servers using SMTP, thus if one wanted to set up an e-mail server on the Internet, one would look for e-mail server software that supports SMTP.

Snail Mail A slightly derisive reference to the Postal Service, which is seen in the Internet world as definitely inferior to e-mail, moving at the pace of a snail, taking several days to deliver a message that takes a few seconds by e-mail.

Spam Sending the same message to a large number of people who didn't ask for it is known as "spamming."

Streaming A technology that allows a sound or video file on a Web page to begin playing as soon as the beginning of the file arrives. Without streaming, the entire file (file sizes are very large for sound and video) must be downloaded before anything can happen. As streaming becomes more widely used, sound and video will become much more commonplace on Web pages. You will usually be asked to select a streaming speed when viewing video. Options usually range from 56k to 100k to 200k to 300k. Dial-up users should choose 56k though the quality of this video and audio via traditional phone lines is very poor. As bandwidth increases so does streaming quality. A 300k video stream can be viewed at a

full-screen size setting on your monitor and will come close to resembling a television signal.

StuffIt A software application that allows users to compress, and thereby significantly decrease, file size especially for the purpose of transferring documents over the Internet.

T1 A type of high speed connecting backbone line that can carry up to 1.536 million bits per second (1.536Mbps).

T3 A type of high speed connecting backbone line that can carry up to 45 million bits per second (45Mbps).

Tag Tags are the HTML codes that tell your browser software what to display on a Web page, including things like formatting, positioning of graphics, and links to other pages.

Transparent GIF Transparent GIFs allow the designer to assign one color to be transparent so that color will be replaced by the browser's background color, whatever it may be. This reduces file size and can increase the download speed.

Universal Serial Bus (USB) A hardware standard for external device connections (such as a mouse, modems, game controllers, and keyboards).

Usenet A worldwide system of discussion groups on the Internet, also known as newsgroups. There is no central organization or rules for these groups, which can be initiated by any user, and which come and go frequently.

URL (uniform resource locator) Everything you see on the Web has a distinct address or URL. The URL usually begins with http:// and is followed by the domain name, such as www.thirteen.org, which is then followed by a backslash and any number of words and more backslashes, each of which represent individual pages that constitute the Web site.

Uudecode A utility program that restores a binary file to its original format for local viewing after downloading from a Usenet newsgroup or receipt as an attachment to an e-mail message. (See Uuencode below.)

Uuencode A utility program that takes a binary file, which could be a program or graphic, and converts it to ASCII text for easier

transfer to a Usenet newsgroup or as an attachment to an e-mail message.

Videoconferencing A conference between two or more participants at different locations over the Internet or a private network. Each user has a video camera, microphone, and speakers mounted on his or her computer. As the participants speak to one another, they hear each other's voices and see a video image of the other participant(s).

Web Short for "World Wide Web," the multimedia portion of the Internet with color, graphics, sound, video, and other possibilities. The Web is made up of pages organized into sites all over the globe linked by hypertext. The exploding popularity of the Web has made it a household word seemingly overnight. Web and Internet are always capitalized.

Webcasting The process of providing audio and/or video news or entertainment content over the Web using streaming technology. Also sometimes used to refer to providing content via push technology.

Web page A location on the World Wide Web, usually a part of a Web site. The term "Web page" is sometimes used to describe any HTML document.

Web site A group of related Web pages.

WYSIWYG (What You See Is What You Get) A program in which you can see the effects of formatting rather than just the codes that produce it. Several new WYSIWIG programs for designing Web pages enable a page designer to see how the page is going to look rather than just seeing the text code.

Zip A type of computer file format to compress a file to save space and to speed up transfers. A compression/expansion program is used to accomplish this (and also to expand or decompress the file after transfer).

Bibliography

Here are a few references to help you get started on the Internet. They will help keep you up-to-date and informed.

Books

Surfing the Internet with Netscape. Published by Sybex. This is a good visually based book that includes a disk with useful utilities to help you get started. Since Netscape changes every three months or so, some of the information may be out of date.

The Internet for Dummies. IDG Books. This book is a good introduction to the Internet.

The Whole Internet Catalog. Ed Krol. Published by O'Reilly & Associates, Inc. This is a good glossary of the Internet. If you need to teach others about the Internet, this can be helpful.

The Internet for Teachers. Bard Williams. Published by IDG Books. An Internet book written by teachers for teachers, this book defines all of the Internet terms in understandable language. The book comes with software that bookmarks sites specific to curriculum.

Educator's Internet Companion. Published by Wentworth World Wide Media. Divided by curriculum area, this book outlines 30 Internet lessons and includes a reference CD with all of the Web sites bookmarked for easy reference.

Educator's World Wide Web Tour Guide. Published by Wentworth World Wide Media. A graphical tour of over 200 educational Web sites, each divided by subject area.

Magazines

Classroom Connect. Published by Wentworth World Wide Media. This is the best classroom resource publication for teachers. It has many good ideas and links. There is always at least one article that speaks to the novice and all terms are defined. Definitely the place to start if you are just beginning!

Wired. This is a magazine for hip Web surfers. It has many interesting articles that relate to science, education, business, the arts, and Web publishing.

The Net. A good magazine, full of URLs. This is aimed at average users of the Web, but there are many good education sites. It also contains short reviews of sites.

Online Access. This magazine is designed for people using bulletin boards and commercial providers. The magazine lists some interesting places, but most sites cost money to access.

Technology & Learning. A great magazine for finding out what other teachers are doing in the field of educational technology. Particularly impressive is the magazine's review of educational Web sites.

Online Magazines

C-Net
www.cnet.com

This online magazine has good reviews of new products, many with links to the manufacturers. C-Net also has discussions on topics of interest and lists of URLs as well as a RealAudio section. If you subscribe, you will get an e-mail message each week informing you of new features. C-Net also has a show on the Sci-Fi cable channel. Lastly, C-Net has one of the best search engines on the Net.

HOTWIRED
www.hotwired.com

This is the online version of Wired. It has some fun art items and is generally dedicated to finding new ways to use the Web. It's more than just a magazine that happens to be online. If you subscribe you will get a weekly update via e-mail.