Lesson 5: Internet Search/Research

“I look at Google and think they have a strong academic culture. Elegant solutions to complex problems.”

- Mark Zuckerberg

Internet research is the practice of using Internet information, especially free information on the World Wide Web, in research. It is:

- focused and purposeful (so not recreational browsing),
- uses Internet information or Internet-based resources (like Internet discussion forum)
- tends towards the immediate (drawing answers from information you can access without delay)
- and tends to access information without a purchase price.

Internet research has had a profound impact on the way ideas are formed and knowledge is created. Common applications of Internet research include personal research on a particular subject (something mentioned on the news, a health problem, etc.), students doing research for academic projects and papers, and journalists and other writers researching stories.

Research is a broad term. Here, it is used to mean "looking something up (on the Web)". It includes any activity where a topic is identified, and an effort is made to actively gather information for the purpose of furthering understanding. It may include some post-collection analysis like a concern for quality or synthesis.

The Internet can be a researcher's dream come true. By browsing the Internet, much as you would browse the shelves of a library, you can access information on seemingly limitless topics. In addition, web-based catalogs are available in many libraries to assist researchers in locating printed books, journals, government documents, and other materials.

Possibly the biggest obstacle facing researchers on the Internet is how to effectively and efficiently access the vast amount of information available with the simple click of the mouse. With the Internet's potential as a research tool, teachers must instruct and guide their students on manageable strategies for sorting through the abundance of information.
Unit 3: Contextualized Online Search and Research Skills

The search for reliable resources can be both overwhelming and frustrating if students are left on their own in their initial search. A few simple guidelines can make conducting research more manageable, reliable, and fun.

The research process

Lessons and projects should be designed so that research time on the Web can be maximized in terms of efficiency. This may mean gathering necessary information beforehand, having students work in groups, or focusing on whole-class projects.

Barron and Ivers (1996) outlined the following cycle for online research projects.

**Step 1: Questioning** --- Before going on the Internet, you should structure their questions.

**Step 2: Planning** --- Develop a search strategy with a list of sites to investigate.

**Step 3: Gathering** --- Use the Web to collect and gather information.

**Step 4: Sorting & Sifting** --- Analyze and categorize the data they gathered on the Web.

**Step 5: Synthesizing** --- Integrate the information into the lesson, and draw conclusions.

**Step 6: Evaluating** --- Assess the results, and if necessary, begin the process again.

Searching the Web

There are billions of pages of information on the World Wide Web, and finding relevant and reliable information can be a challenge. Search engines are powerful tools that index millions of web sites. When entering a keyword into a search engine, you will receive a list with the number of hits or results and links to the related sites. The number of hits you receive may vary a great deal among different search engines. Some engines search only the titles of the web sites, and others search the full text.

Techniques for using the different search tools vary. For best results, read the search tips or hints that are provided at each search site. Also, note that some of the search engines do not allow Boolean searches that combine words with the logical connectors of AND, OR, or NOT.
Common commands for search engines include:

- **Quotation Marks ( " )**
  
  Using quotation marks will help to find specific phrases involving more than one word. For example: "Martin Luther King"

- **Addition Sign ( + )**
  
  Adding a + sign before a word means that it MUST be included in each site listed. For example: + Florida + taxes

- **Subtraction Sign ( - )**
  
  Adding a - sign before a word means that it will NOT appear in the sites listed. For example: + Washington -DC

- **Asterisks ( * )**
  
  Asterisks can be used for wild-cards in some search engines. For example: Mexic* will look for Mexico, Mexican, Mexicali, etc.

**Search engine capabilities**

Search engines are rated by the size of their index. Large engines such as Google are good tools to use when searching for obscure information, but one drawback to an extensive index is the overwhelming number of results on more general topics. If this is the case, it might be better to use a search engine with a directory structure such as Yahoo.

Many search engines provide directory-listing search tools such as yellow pages, white pages, and email addresses. In addition, many allow you to personalize their site to your needs. For example, you might want to set the attributes of the page to show educational news headlines and your favorite teacher resource links. In the preferences of your web browser, you can then set this page as your home start-up page.

**Search engines especially for children**

Search engines designed for younger students are useful tools for the classroom. They screen for inappropriate material and provide appropriate sites for students on topics related to educational and entertainment purposes. Using these sites helps to narrow the scope of hits on a search inquiry. As a result, the student will spend less time reading irrelevant material.

Although some search engines allow you to turn on filters to help filter out adult content, they are not always thorough or accurate. There are several good search engines that are specifically designed for the younger audience, such as Ask Jeeves and Yahooligans.

**Evaluating Internet sources**

Students often uncritically accept information they see in print or on computer screens. It
is encouraged to carefully evaluate sources found on the Internet. The evaluation tool (below) will help to analyze web resources in terms of accuracy, authority, objectivity, timeliness, and coverage. Consideration of these factors will weed out many of the inaccurate or trivial sites students may encounter.

**Analyzing web resources**

Answer the following questions to evaluate web resources.

**Accuracy**
- Are sources listed for the facts?
- Can information be verified through another source?
- Has the site been edited for grammar, spelling, etc.?

**Authority**
- Is the publisher reputable?
- Is the sponsorship clear?
- Is a phone number or postal address available?
- Is there a link to the sponsoring organization?
- Is the author qualified to write on this topic?

**Objectivity**
- Does the sponsor have commercial interests?
- Is advertising included on the page?
- Are there obvious biases?

**Currency**
- Is a publication date indicated?
- Is there a date for the last update?
- Is the topic one that does not change frequently?

**Coverage**
- Are the topics covered in depth?
- Does the content appear to be complete?

**Setting bookmarks on the Web**

Browsers such as Safari, Firefox, and Internet Explorer provide a way to create a list of your favorite sites that you can access with a click of the mouse. The procedure for creating a list of sites is an easy and powerful tool for web use.

When you find a web page that you want to bookmark,

- simply select the "Add Bookmark" or "Add Favorite" option from the menu bar.
- To return to the site at a later time, choose the name from the bookmark or favorite
You can organize your bookmarks into file folders and can save them on a disk to transfer and use on other computers.

**Copyright issues**

Everyone has a somewhat flexible, but not unlimited, copyright privilege under the "fair use clause" of the U.S. Copyright Act. "Fair use" is the means by which educators of non-profit educational institutions may use copyrighted works without seeking permission or making payment to the author or publisher. Teachers and students are also protected to some extent by the Digital Millennium Copyright Act, which went into effect in October 1998. Under current guidelines, teachers and students are able to make limited use of copyrighted materials for instructional purposes.

Currently, copyright law as it relates to the Internet is vague and being challenged and rewritten on an ongoing basis. However, the guidelines of the "fair use clause" can be applied to Internet use in the classroom. Although classroom use allows teachers and students to be creative, you must also be extremely careful. Teachers and students should realize that all materials found on the Internet are protected by the same copyright laws as printed materials. Copyright protects "original works of authorship" that are in a tangible form of expression.

Copyrightable works include the following categories:

- literary works
- musical works, including any accompanying words
- dramatic works, including any accompanying music, pantomimes, and choreographic works
- pictorial, graphic, and sculptural works
- motion pictures and other audiovisual works
- sound recordings
- architectural works

These categories should be viewed broadly. For example, computer programs and most "compilations" may be registered as "literary works"; maps and architectural plans may be registered as "pictorial, graphic, and sculptural works."

Important questions to ask

- What is the purpose for using the material?
- Who is the audience?
- How widely will the material be distributed?
- Will the material be reproduced?
Unit 3: Contextualized Online Search and Research Skills

It is allowable under copyright guidelines to use copyrighted materials for class assignments. Check specific guidelines for length of time the material can be kept up on a web site.
EXERCISE 3

Name: ___________________________  Score: _________
Year & Section: ___________________  Date: __________

Direction: Write your answer in the space provided.

Using the major search engines on the Web, find the best way to look for a needle. Fill out the following chart, noting the number of hits you receive in each of the search engines for the word needle and the phrase "Space Needle." Then, answer the questions at the bottom of the page.

<table>
<thead>
<tr>
<th>Search Engine</th>
<th>Search for: needle</th>
<th>Search for: &quot;Space Needle&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Webcrawler</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yahoo!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Which search engine would be the best if you were looking for something very obscure?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Did searching for "Space Needle" always result in more hits or less hits than searching for needle? Why?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. Which search engine seemed to display the result fastest?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
4. Which search engine seemed to display the result fastest?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

5. Try another search. This time, look for sites that contain all of these words: needle, sleeping, and beauty. (Hint: On many of the search engines you can specify that certain words MUST be included by adding a + in front of the word: +needle +sleeping +beauty.)

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

__________________________.
EXERCISE 4

Name: ________________________________  Score: ________
Year & Section: __________________________  Date: ________

Direction: Write your answer in the space provided.

**Browse the Library Congress**

Visit the Library of Congress Gateway to Library Catalogs.
http://lcweb.loc.gov/z3950/gateway.html

**ACROSS**
01. Who is the author of *Waiting for Godot*?
03. What is the last digit in the ISBN number for Ann E. Barron's 1997 book?
04. Who wrote *The Mysterious Cat*?
06. Who wrote a pantomime about *Jack and the Beanstalk*?
07. What is the first word in the title of one of Michael Verney's books?
09. What is the last digit in the LC Call Number for *101 Dalmatians* by Justine Korman?
10. Who wrote *Anatomy of the Honey Bee*?
12. When *Ten Great Basketball Offenses* was revised, how many offenses were there?
13. Who wrote the *Global Mind*?
14. What is the title of a book by Leon Uris?

**DOWN**
01. Who wrote *How Good Guys Grow Rich*?
02. How many books did Judy Blume publish in 1972?
03. What does the F. stand for in F. Scott Fitzgerald?
05. Who illustrated *The Adventures of Huckleberry Finn*, published by Heritage Press in 1940?
08. Where was the *Equestrian Statue of Peter I* published?
11. How many years did the author of *The Scarlet Letter* live?
Answer: