



Welcome to Internet Searching

This module will help you learn how to improve your Internet search skills.

In it you'll find information about different types of search engines, learn about advanced search techniques, and discover tips and tricks to help you conduct more effective and efficient Internet searches. In addition, you will review two ways to help you evaluate the quality of the Internet resources that you find.





Objectives

By completing this module, you should be able to:

- describe several types of Internet search engines.
- identify common search features.
- explain how to create a good search query.
- identify common search symbols and advanced search techniques.
- discuss ways to evaluate Internet resources and websites.

You'll know you have successfully completed this module when:

- you can comfortably search for various types of content and topics.
- you can conduct effective and efficient searches using search symbols and advanced search techniques.
- you can reliably evaluate Internet resources and websites.



Search Engine Basics

The Internet is huge, containing tens of billions of pages, and is growing daily. In November 2004 Google®, announced that it had indexed and, thus, could locate more than eight billion web pages, more than any other search engine in the world.¹

This vast quantity of information is great and not so great. What does that mean? It means that you can find some information on most any topic, but it also means that finding valuable and reliable information can be hard. The more resources you find on the Internet, the more sorting and evaluating you need to do. In the battle between quantity and quality, effective searching is your best weapon.

According to a 2005 report by the Pew Internet & American Life Project, Americans make about four billion Internet searches every month.² Most of these searches are conducted with a crawler-based search engine.

Crawler-based search engines contain gigantic databases, or large computerized holdings of information. Crawler-based search engines are often referred to as *spiders* because they *crawl* the Internet, sometimes even the dark nooks and crannies, following links and looking for new web pages. As these computerized spider bots (robots) find new pages, they *read* the information and add or copy portions of it to their databases. While most crawler-based search engines operate in a similar way, the exact method a search engine uses to store information depends on the company's specific software.

¹ "Most Wanted: Drilling Down/Search Engines: Does Bigger Mean Better?" by Mark Glassman, November 22, 2004, *New York Times*.
<http://www.nytimes.com/ref/business/media/041122MOSTWANTED.html?ex=1101877200&en=e71524f6>

² "Search Engine Users," Pew Internet & American Life Project, January 23, 2005.
http://www.pewinternet.org/pdfs/PIP_Searchengine_users.pdf



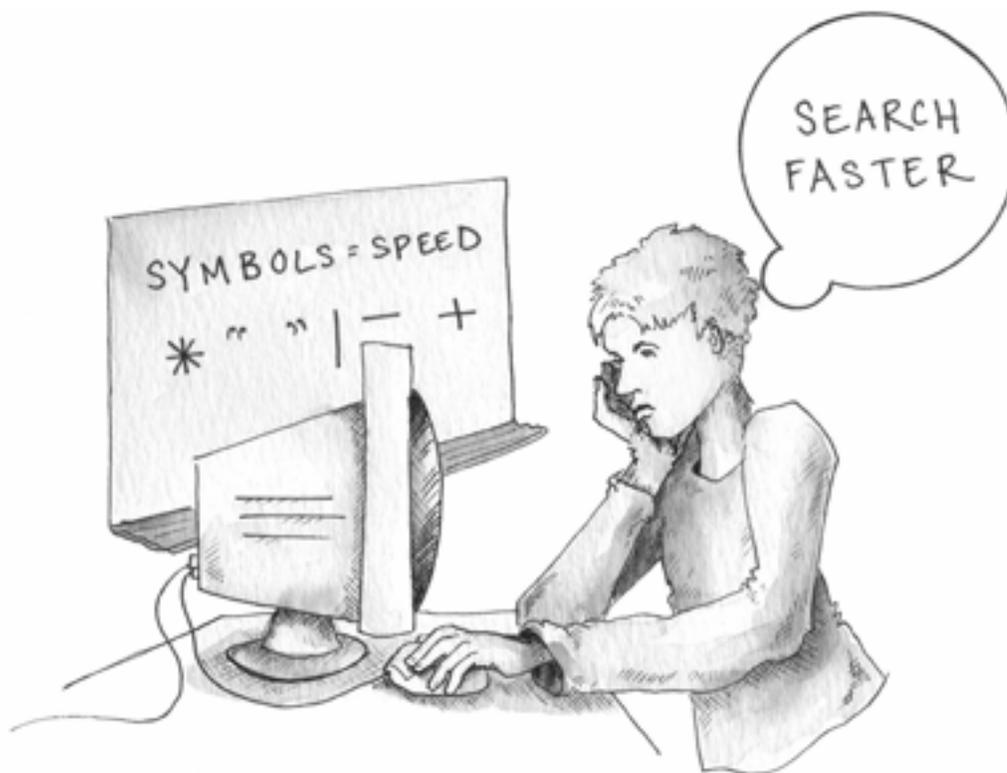
In addition to crawler-based search engines, you can search the Internet using metasearch engines, single-site search engines, and search engines especially designed for kids (see the chart below). Just remember, the Internet is growing all the time and no search engine is capable of searching the entire world wide web. Some search engines specialize in finding certain types of files—video, for example—so sometimes you might need to try the same search with different engines.

Types of Search Engines		
Name	Description	Examples
Crawler-Based Search Engines	These search engines <i>crawl</i> the Internet and create gigantic databases, or large computerized holdings, of the information it finds.	Google® Yahoo!® search MSN® Search AlltheWeb® AOL® Search
Metasearch Engines	These search engines pull information from several different search engines and display the results in a single place.	Dogpile® Clusty® Webcrawler®
Single-Site Search Engines	These search engines search the information found in a company's or organization's own database(s).	American Memory , Library of Congress (LOC)
Kid-Centered Search Engines	These search engines select and display information kids need and want in a way that's easy to understand.	Yahoo! Kids® Ask for Kids™ KidsClick!



Internet Search Techniques

This section provides general strategies for conducting quick and efficient Internet searches from crawler-based search engines. Please keep in mind that most search services list rules and strategies for searching with their particular engines on their websites. Check the **Help** or **About** sections to find more information or clarification about any particular search site.





Common Search Features

Most search engines offer some of the more typical search features listed below.

Searching for Specific Content Types

Sometimes you might want to look for a specific type of information, perhaps just a picture. Most search engines offer different types of searches for specific content types, usually as tabs, on the search homepage. Specific content types usually include images or photos, news articles, video files, discussion forums, and blogs, or specific topics such as government, legal, travel, and shopping.

Blog is short for web log and refers to a publicly accessible personal journal.

Help Sections

Help sections are included to assist you in learning how the search engine works. These help sections also usually offer tips and strategies on the best way to use a particular search engine to most efficiently and effectively search the Internet. If the link to the Help section is not obvious, try looking for a link containing the word, "About."

Advanced Search Pages

Advanced search pages help guide you when you want to conduct more complex searches. They often feature form fields and drop-down menus to help make selections that clarify the search in order to find more specific results. For example, advanced search techniques might help locate materials with specific phrases or materials published in certain languages.



Sponsored Results, Be Aware!

Many search engines provide “sponsored results” as a way to generate money for the company. Sponsored results come from organizations that pay the search company to display their information in a prominent place. Usually, sponsored results are listed at the top or the right side, but they are not always clearly identified as sponsored results. Be aware of sponsored results, particularly when searching for information for school projects! Information from sponsored lists may not be very educational. Remember, someone is paying to have the site appear at the top of a results list, usually with the hope that you will buy something.

The Search Query

The search query consists of the word or words, called keywords, you type into the search-engine search box. These keywords are the words the search engine looks for when scanning the information located in its database.

Most search engines will automatically search for all of the keywords entered into the search box. The web pages that contain the most instances of all of these keywords will appear at the top of the results list for your search. In addition, most search engines also focus on the order of the words, presenting pages that feature the keywords listed in the same order as they were entered in the search box before pages where the keywords are included, but not listed in the same order.

The more clear and specific keywords that you use, the more likely the search results will point you to the information you are seeking. Below are a few keyword strategies to help you create the most effective search queries.



- **Common words are ignored.** Articles (a, an, the), pronouns (I, you, he, she, it, we, they); conjunctions (and, but, or), prepositions (to, for, on), question words (what, where, when, why, how), and single letters (a, I) are usually ignored by search engines and, thus, are referred to as stop words. That means that even if you enter one of these words into the search box, the search engine will not look for these words when it searches the Internet pages in its database.

Common stop words, words which are often disregarded in a search, include: **the, a, and, as, at, but, for, if, in, or, to.**

- **Punctuation is ignored.** Punctuation and special characters—periods, commas, semicolons, question marks, brackets, parenthesis, at-signs, number signs, slash marks, etc.—are usually ignored by search engines. Some special characters may have special meanings, too, so it's best to eliminate them from your search query unless you are sure of their function in the search context.

Punctuation is ignored , . ; ?
[] () @ / #

- **Hyphens can complicate things.** Hyphenated words often lead to searches of the hyphenated word, the two words separately, and the two words combined (for example, part-time, part time, and parttime).
- **Capitalization is NOT important.** Most search engines ignore capitalized letters.
- **Word order is important!** Try to enter your keywords in the order that they are most likely to appear in the materials that you want to find. For instance, if you want to find practice lessons in English grammar, type "English grammar lessons," NOT "lessons grammar English." Remember, many search engines present pages that feature the keywords listed in the same order as they were entered in the



search box higher than pages where the keywords are included, but not listed in the same order.

- **Fewer words can be better.** Most search engines limit queries to 10 words. If you're not getting the results you wanted, try to limit your search query to 3-5 keywords. If you want to refine a search further, many search engines will allow you to search within a displayed set of results.

Search Operators

Search operators help you make your search query more specific. Search operators are symbols that take on special meaning when entered into the search box. You can probably find a list of search operators used by your favorite search engine by looking in the Help section. The minus sign [-] and quotation marks [" "] are two of the most common and most useful search operators used by most search engines.

Quotation Marks



Use quotation marks to search for an exact phrase. When you enter two or more keywords within quotation marks, the search engine will only return results that contain that exact phrase. For example, if you enter *"grilled cheese sandwich"*, the search engine will only return pages that contain that exact phrase.

All words within the quotation marks are considered part of the exact phrase, even stop words. See how it works for yourself. First, enter the following keywords into a search box: *star trek the next generation*. How



many results were found? Now try entering the same keywords

within quotation marks: *"star trek the next generation"*. How many results were found this time? What a difference a few quotes make!

Minus Sign



Use the - symbol to subtract a word from a search. When you **enter the minus symbol directly before a word (no space between the symbol and the word)**, you are telling the search engine not to return pages that contain the word that follows the minus symbol. For example, the search query *grilled cheese -sandwich* instructs the search engine to search for pages that contain the words *grilled* and *cheese* but not *sandwich*. You can then refine your search even further by adding quote marks: *"grilled cheese" - sandwich*. Look at the number of results found to see how you were able to eliminate the number of pages found. Here are a couple of examples you can try on your own.

Example: If you want to find information about dolphins, try the search phrase *dolphins -miami* to remove all references to the Miami Dolphins football team.

Example: If you want to find out about constitutions other than the United States Constitution, try the search phrase *constitution -us -united -state*

Once you've tried a search, use the – symbol to eliminate certain matches from a results list. For example, let's say you want information on computer operating systems other than the Windows® operating system. To eliminate all references to the Windows operating system from the search results, enter *"computer operating system" -windows* into the search box.



Below are a few more examples of using the minus to refine your search results.

Example: If you know want to find information about computer viruses other than worms, try the search phrase

"computer viruses" -worms

Example: If you want to find information about the Harry Potter book, *The Prisoner of Azkaban*, and not the film, try the search phrase *"prisoner of azkaban" -film*

Advanced Search Techniques

Once you've searched using quotation marks and the minus sign, you might want to try your hand at using some more advanced search techniques. Some of these techniques can be used directly from a search box, others may need to be accessed through a search engine's advanced search page.

Search Specific Content Types

As we mentioned earlier, many search engines allow you to search for specific content formats, such as images, news articles, video or audio files, discussion forums, and blogs.

Search Specific Topics

Some search engines allow you to search within specific topic areas such as shopping, travel, government, and legal.

Search Specific Sites

Some search engines allow you to search only within a certain site. For example, to search within a single site on Google®, enter your keyword(s) followed by a space and then site:site name.



Example: If you want to find information about mars from Nasa,
enter *mars site:nasa.gov*

Similarly, you can use the power of Google to help search large sites like the American Memory site at the Library of Congress, by entering your keyword(s) followed by a space and then *site:memory.loc.gov*. To learn how to search individual sites using other search engines, refer to the Help or About sections on those sites.

Search Page Title

Some search engines allow you to search only web page titles, which are usually listed in the top left corner of the web browser. Web page titles often function like newspaper headlines, providing a short, easily understood overview of the web page contents. To search a web page title on Google, enter *allintitle:keyword(s)*.

Example: If you want to find information about mars craters, enter
allintitle: mars crater

This technique can help limit your results and more quickly find pages with the most meaningful information. To learn how to search web page titles using other search engines, refer to the Help or About sections on those sites.

Search Specific File Types

Some search engines allow you to search only for specific file types. Common file types include: .txt (text), .rtf (rich text format), .pdf (primary document format), .doc (document), .xls (spreadsheet), .ppt (presentation). To search for certain file types on Google, enter your keyword(s) followed by a space and then *filetype:file extension*.

Example: If you only want to find Microsoft PowerPoint® presentations about mars craters, enter *mars craters filetype:ppt*



This technique will focus your search on information presented in a format that most readily meets your needs.

Search Specific Languages

Some search engines allow you to search for terms only in web pages written in specific languages. Keep in mind, though, web pages that are written in two or more languages can “confuse” the search engine and may not appear on results pages. Refer to a search engine site’s Help or About section to use this technique.



Evaluating Internet Resources

Once you've perfected your Internet search techniques, you can conduct quick and efficient searches. But just because you find information on the topic you were looking for, doesn't mean that you have found reliable information from a reliable source. So how do you know what information and what sites are reliable? The rest of this module helps you to learn just that.

A good basic tool to use to evaluate the content of any source is the CARS checklist. CARS stands for Credibility, Accuracy, Reasonableness, and Support.

CARS Checklist for Research Source Evaluation		
Checklist Item	Description	Questions to Ask
Credibility	A credible source comes from a known author or organization or from one with related and verifiable credentials and contains quality information backed up by evidence and sound reasoning.	<ul style="list-style-type: none">• Is sufficient evidence presented to make the information believable and the arguments persuasive?• Are there compelling arguments and reasons given for statements and conclusions?



Checklist Item	Description	Questions to Ask
Accuracy	An accurate source is factual, detailed, exact, comprehensive, and up-to-date.	<ul style="list-style-type: none"> • Is there a source date listed? • Do statements and arguments present or respond to opposing views? • Are statements, arguments, and conclusions detailed or vague? • Is sweeping language used (always, never, every, none, completely) in place of qualified language (usually, sometimes, seldom, some, tends to)?
Reasonableness	A reasonable source is fair, balanced, objective, and reasoned.	<ul style="list-style-type: none"> • Are statements, arguments, and conclusions presented with a reasonable tone and reasonable language?



Checklist Item	Description	Questions to Ask
Support	A well-supported source contains statements and arguments that are well documented and can be corroborated by other sources; lists its source information, including links, if available; provides contact information.	<ul style="list-style-type: none">• Where did this information come from and what support is there for the statements, arguments, and conclusions?• What sources did the information creator use?• Does the author provide contact information in case you wish to discuss an issue or request further clarification?



An for Website Review

For a more comprehensive evaluation of an entire website, including the usability of the website, you might want to use the chart below that was developed by FutureCourse Education.

1. Identifiable

Review Criteria	Evaluation
<p>Is the website from an identifiable, reputable source?</p> <ul style="list-style-type: none">• Schools and universities (.edu)• U.S. Government branches (.gov)• Museums• Encyclopedias• Official national sites (for example, .ca in Canada)• Established, recognized companies and organizations, for-profit and non-profit (.com, .net, .org)	
<p>Is the site managed by an objective and unbiased source?</p>	



2. Informative

Review Criteria

Evaluation

Does the site have the right information?

An informative site includes:

- Important information about your topic of interest
- In-depth information about the topic
- Examples and artifacts that are related
- Illustrations that clarify complex points
- Up-to-date information

Is the content easy to read and understand?

- Is the information clear and well organized?
- Is the content written in a tone and style appropriate for the audience?
- Is the language at the right reading level?
- Is the site free from grammatical errors and spelling mistakes?
- Does the site use formatting techniques to increase readability (bullet points, different fonts, bold face type, line spacing, etc.)?
- Does the site include the capability to print pages?



3. Interesting

Review Criteria

Evaluation

Review Criteria	Evaluation
<p>Does the site seem interesting?</p> <ul style="list-style-type: none">• Exciting related topics• Appropriate graphics/images• Interactive elements• Coordinated color scheme	
<p>Does the site use graphics effectively?</p> <ul style="list-style-type: none">• Are the images related to topic?• Are they effective and not overwhelming?• Do the images communicate new information?• Is the color scheme coordinated and appropriate?• Are the images appropriate for the information and the audience?	



4. Intriguing

Review Criteria

Evaluation

Review Criteria	Evaluation
<p>Does it lead you to explore other sources of information?</p> <ul style="list-style-type: none">• Does the site provide links to more effective sites/resources?• Does the site include a discussion of related topics?	
<p>Does the site help spark other ideas?</p> <ul style="list-style-type: none">• Does the site inspire ideas for your project?• Does the site give new angles to the assignment?• Do you have more questions about the topics because of the site?• Does the site make you think?	



5. Instinctive (smart design)

Review Criteria

Evaluation

<p>Is the site well-designed?</p> <ul style="list-style-type: none">• Easy navigation• Site map/search function• Uncluttered	
<p>Is the content easy to read and understand?</p> <ul style="list-style-type: none">• Written for the audience• No grammatical errors or spelling mistakes• Text presented in chunks that are easy to read	
<p>Would you recommend the site to others?</p> <ul style="list-style-type: none">• Does it provide specific information about a certain topic?• Does it provide general information about a certain field?• Does it provide a collection of resources or a search engine?	



6. Interactive

Review Criteria

Evaluation

<p>Can you interact with the site?</p> <ul style="list-style-type: none">• Can you ask questions?• Can you play games?• Can you email or save data?	
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7. Instructionally Sound

Review Criteria

Evaluation

<p>Does your teacher think that this is a good site for reference and learning?</p>	
<p>Do you think that this is a good site for reference and learning?</p>	