How to Conduct an Effective Web Search

Sometimes you need to search for information on the Internet. You might need information for a school project or simply because you are interested in a topic. Searching for information on the Web can be rewarding. It can also be frustrating. It may take hours to sift through the thousands of sites that pop up from a search. It can also be difficult to determine which information on the Web is credible or reliable, and there is often conflicting information on different Web sites. *How to Conduct an Effective Web Search* gives you a few pointers on how to search for information on the Web. Whether you want to broaden the search to include more documents or narrow the search to return fewer documents, the following steps will help you conduct a balanced search so that you can more easily find information related to your topic. These steps will also help you determine whether the information comes from reliable sources.

Web Search Guidelines

1. ***Choose keywords carefully.*** Enter keywords that relate to your topic into a search engine. Choose nouns and objects as your keywords. For example, if you are searching for information about new planets discovered outside our solar system, using the keyword *planet* (or *planets*) would be a good start. Verbs, adjectives, and adverbs are less useful as keywords because often they are thrown out by search engines.
2. ***Use several keywords.*** Entering four to six keywords will narrow down the search and will help you find more specific information related to your topic. Using the example above, you might want to use the keywords *new, planet, solar, system,* and *discovery* to find more specific information about the discovery of new planets outside our solar system.
3. ***Use variations in keywords connected by OR.*** For example, if you enter the keywords *planet OR planets,* the search engine will retrieve documents containing the word planet and documents containing the word planets. The word *OR* allows you to search both variations of the word *planet.*
4. ***Use synonyms connected by OR.*** For example, if you enter the keyword phrase *discover OR find,* you will be able to find documents containing either the word *discover* or the word *find.* Using synonyms connected by the word *OR* will allow you to broaden your search with less effort.
5. ***Use quotation marks (“ ”) for keywords of two or more words.*** For example, *solar system* can be considered a single keyword but because it is made up of two separate words, a search for both words might result in a Web site that contains the phrase, “The city developed a new system of solar panel technology.” Using quotation marks will restrict the search to an exact match of this multiple-word keyword you are entering.
6. ***Combine two or three concepts in one search, set off by parentheses.*** Using the steps above, you can combine single keywords, multiple-word keywords, and *OR* connections to narrow your search even further by setting off each concept by parentheses, for example, *(“solar system”)(“new planet”)(discover OR find)*.
7. ***Order concepts with the main subject first.*** Search engines tend to rank documents that match the first keywords in a search higher than those that match the second, third, and fourth keywords. Hence, the best order to use in the search for Web sites containing information about new planets discovered in our solar system would be *(“new planet”)(discover OR find)(“solar system”)*.

Identifying Credible Web Sites

1. ***Know what credible means.*** The word *credible* means you can reasonably believe the information that you have been given. Credible information is usually written by experts who have studied the topic for a long time. These experts are generally well respected. Credible information tends to be consistent even when it comes from different sources. It has evidence that supports it and reasoning that explains the evidence. If an opinion is included in the information, it is clearly identified as an opinion instead of evidence. Today, entire Web sites may be based on opinion. In particular, Web logs (blogs) are often used to share opinions, even though facts may be mixed in to support the opinion.
2. ***Identify the author of the information.*** If a Web site does not identify who wrote the information, it is less credible. If an organization wrote the information on a Web site, that organization is identified. You can usually find the name of the organization when you look at the Web site. Often, the organization includes a link back to its own page so you can find out more about it. When a person writes the information on a Web site, his or her name should be included. The Web page may also include information about that person's education and jobs. Use this information to determine whether the person is likely to be a good source. Web sites that lack identifying or funding information are less credible than those that contain information about the authors.
3. ***Choose information based on credibility.*** Usually, you will find several Web sites that have information about your search. First review Web sites you feel are credible. A credible Web site may come from scientific, government, or major nonprofit organizations. Government Web site addresses always end with ".gov." The National Institutes of Health and the National Science Foundation are examples. Major nonprofit organizations have Web sites that end with ".org." The American Heart Association and the National Center for Science Education are examples of major nonprofit organizations. Scientific Web sites are usually associated with the publication of a scientific journal, a university, a museum, or a national conference of scientists. An example includes the American Association for the Advancement of Science, which publishes *Science* and *Science News.* Another example is the Web site titled Understanding Evolution, which is associated with the University of California Museum of Paleontology.

   There may be credible information on other Web sites. However, the credibility of this information is more difficult to determine. One way to determine whether such sources are credible is to check to see whether the information contains citations. Citations are enclosed in parentheses or are indicated by a superscript number or letter. Citations refer to references, like a bibliography, that can be traced back to credible sources. Web sites that contain reference information are more credible than those that lack this information.