Search Engine Basics

What is a search engine?

A search engine is something that lets you look for information. **Google.com** and **Bing.com** are popular general-purpose search engines which people use to locate information on the **World Wide Web**. The **library catalog** is another kind of search engine, and so, in a manner of speaking, is *a librarian*!

There is *more* to a search engine than its **search prompt**: behind the scenes there is something called a "crawler," "spider," or "indexer" that continuously gathers information and builds a **database** (which is what your words will be compared with *after* you search).

What happens *after you type something into a search engine?*

Your words (**search terms**) are **processed by a computer** – usually *not* the computer you are using but rather a computer system that receives the information you typed. That system scans for matching words, phrases, and other things you included in your search.

Words like **the**, **an**, **a**, and **of** are known as "**stop words**" and are often *disregarded* by search engines. If you put quotation marks "around two or more words," many search engines will search for a **phrase** instead of *individual words*. Some search engines let you place plus (+) or minus (-) signs *before* words or phrases so you can *specify what words you want or do not want to be found*. The **Google.com** search engine interprets **"quotation marks"** around **words** or **phrases** as *required words or phrases*.

Once a search engine finds potentially matching items for your search terms, it displays a list of **search results**, which you then inspect and click through.

How do they know *what websites to show you?*

Most search engines are not that smart! They rarely can be said to "know" anything other than to report which pieces of information contain the words you typed. If you *mistyped a word* or did not use *specific words* or descriptions in your inquiry, most search engines will report *less relevant results* or *no results at all*.

Some search engines might attempt to clarify what you might have meant by displaying **alternate spellings** or phrases along with a question: "Did you mean?" Please try to use *very specific* or *descriptive* words whenever you search and consider alternate terms.

What determines *the order of the search results?*

Some search engines attempt to display search results according to estimated **relevancy** or **popularity**: most frequently visited websites, bestselling titles, and so on. Other search engines simply show you results in no particular order.

Some search engines allow companies and individuals to purchase search terms so that, when you look for something that contains a word or phrase they paid for (or "sponsored," as they say), their information can appear prominently in or near the list of search results.

Sponsored results should be carefully considered since they might be motivated by a desire to *sell you something* or to *promote a certain point of view*. In fact, you should *always exercise **critical thinking** for all information you encounter*. This also goes for information *off* the Internet! When you get the chance, please check out our free publications on critical thinking at **www.thrall.org/think**

What are metasearches, *and how do they work?*

Metasearches allow you to tap into **multiple search engines** *at the same time*. In a *metasearch*, results are gathered and merged from various search engines and reported on a single page. **Dogpile.com** is one popular metasearch.

Which search engine *should you use?*

Good question! You *should* choose the search engine which is *most relevant to your inquiry*. In reality, many researchers tend to rely on **general-purpose search engines** for *everything* they want to find. This is a *very bad habit* and can lead to *too many results*, *wasted time*, *frustration* (usually from having to search repeatedly or sift through pages of irrelevant results), and generally *inferior* information.

Specific search engines – those focused on a particular **theme** or **subject** – will often yield *better* results. **MedlinePlus.gov** (from the U.S. National Library of Medicine, National Institutes of Health) can be a useful search tool when researching health terms and related articles. Most local and college libraries provide **free access to article databases** and many *other* excellent research services.

It is a fact that **librarians** are some of the best human "search engines" you can consult because they search *constantly* and, from that ongoing experience, can often show you *quicker* and *easier* paths to information. Librarians also tend to be more *fun* and *interesting* than search engines and actually *care* whether or not you find what you need. Many librarians can be reached over the Internet through your library's website and will send you answers by e-mail, telephone, or through a live chat.

Also remember to use **your library's online catalog**, since information you need could be in a book or another format. It might be hard to imagine, but there is still quite a lot of information that is *not* on the Internet. All the more reason to consult *your local librarians!*