

SEARCH STRATEGIES

Introduction

The better you are at searching, the better you will be able to find the information you need. This handout will cover techniques and strategies you can use whether you are searching for books in a library catalog, searching for scholarly articles in an online database, or using Google and other search engines to find information on the World Wide Web.

Choosing Search Terms

Phrasing your topic as a question is a great way to focus your writing and develop the structure of your paper. It is also a great way to identify terms to use in your search.

In the question *How are insects used to benefit farms that use agroecology principles?*, the key concepts are insects, benefit and agroecology.

In *How can shareholder activism affect corporate accountability?*, the key concepts are shareholder activism and corporate accountability.

In *How is nanotechnology used for cancer therapy?*, the key concepts are nanotechnology, cancer and therapy.

Use those key concepts as your search terms when you search.

If you are having trouble finding the information you need using the key concepts from your question, try using synonyms for those words as your search terms. An online version of Roget's Thesaurus can be found at <http://thesaurus.reference.com>.

Boolean Operators

Once you have identified terms to use in your search, you can make your search more effective by using AND, OR and NOT (also referred to as Boolean operators). Boolean operators come from the system for logical operations created by George Boole in the mid 19th century.

Enter the AND operator between search terms so that the search will only retrieve results that contain both terms.

Many search engines, like Google, the library catalog, the Articles search feature on the Library's home page, and some library databases, will retrieve results as if you entered AND between multiple words in your search. For example, if you enter red white blue in the search box, the search engine will retrieve results as if you entered red AND white AND blue.

Enter the OR operator between search terms to retrieve results that contain the first term or the second term or both terms. This is useful for retrieving results for synonyms and similar concepts.

Use the NOT operator to exclude results that contain a term. This is often useful to apply after you complete a search and find that some of the results you retrieved have nothing to do with your topic.

Many library databases allow you to select AND, OR or NOT from drop-down lists or options button so you don't have to type them into your search. These feature are usually in the "Advanced" search options.

Using Parentheses / Nesting

You can use AND, OR, and NOT in different combinations with multiple search terms to make a fairly complex search. It's best to group your terms within parentheses or else you may not get the results you expect. The search will follow the rules similar to the ones you learned in Math class.

Truncation and Wildcards

Many words have different forms, such as singular and plural, past tense and present tense, and so on. It is often useful to be able to search using the root of a word and retrieve results containing various forms of the word. This is done using special characters often called truncation symbols or wildcard characters.

A truncation symbol, such as an asterisk (*), is added at the end of a root word to represent 0 or more letters that might come after the root word. For example, if you enter child* as a search term, the results will include items that contain the words child or children or childhood, etc.

A wildcard character is usually used to represent one letter in a word. Using the question mark (?) as a wildcard character, you could enter wom?n as your search term to retrieve results that contain the word woman or women. The asterisk (*) and question mark (?) are commonly used as truncation symbols or wildcard characters. Different search engines may use different characters. Other characters that are used include #, \$ and !. Consult the Help pages to find out which characters to use.

Phrase

Sometimes the key concepts you want to search for are phrases instead of single words. To search for your term as a phrase, simply put quotation marks around it.

Search Limits

Most search engines, whether they are for online catalogs, article databases or the Internet in general, have options to limit your search to retrieve results that are the most relevant to you.

Limiting features generally occur in the form of option buttons, checkboxes, drop-down lists and text boxes.

Common limiting options include:

- published within a specific date range
- found in a specific location or collection in a library
- specific type, such as articles, conference proceedings, reports, books, etc.,
- articles from peer-reviewed or scholarly journals.

Different search engines will have different limiting options. In some cases, you will have to go to the "Advanced Search" screen to find them.