How can I use Boolean Operators to improve searches?

Do you have trouble finding the right articles, books, or websites for your research? Sometimes it is difficult to get more than one idea across with just a search box and a “go” button. A good strategy for this is using a set of tools called Boolean Operators. With just a few combinations of operators, you will be able to express exactly what you are looking for. Whether you want to narrow or broaden your results, you get to be in control and locate more relevant resources.

Boolean Basics—Piecing It Together

Boolean operators AND, OR, and NOT help you link more than one facet of your search, bringing you to more focused and effective results. As you brainstorm your topic, think about the relationships of the words or phrases you intend to add to mix. Here are some examples:

- **AND**

  Linking the words “video games” and “violence” together with AND will yield narrower results than searching either term on its own. Every result will contain BOTH of your search terms, delivering more relevant information about your topic.

- **OR**

  Using OR between the search terms “climate change” and “global warming” will broaden the search results. Every result will contain either one of your search terms (or maybe both). This is a good tactic when you want to connect similar concepts related to your topic.

- **NOT**

  Putting NOT between “legumes” and “soybeans” will produce results about legumes, but will exclude those that also discuss soybeans. This helps narrow your search, telling the database to ignore concepts related to your chosen topic, but might still seem like it based on your search terms.
You can combine several Boolean operators

Here is a well-defined topic:  
*The impact of televised soccer in the United States*  
*(but not in Europe)*

Thoughtful use of Boolean Operators allows us to keep all the nuances of our topic. By combining operators, you can conduct the search this way…  
*Television AND Soccer AND United States*  
*NOT Europe*

Other Boolean search strategies

"" ⇒ Quotation Marks  
Use these to keep adjacent words together and search for an exact phrase, like “gender pay gap”

() ⇒ Parenthesis  
These help combine specific groups or phrases, such as *(alternative energy) AND (algae OR seaweed)*

* ⇒ Truncation  
An asterisk (*) at the end of a root of a word allows results that contain variations on a search term. For example, to receive results containing the words nurse, nurses, and nursing, you would enter nurs*

? ⇒ Wildcard  
A question mark (?) or a pound sign (#) between missing letters in a word can help you represent all possible spellings or variations inside a search term. For instance, a search for wom?n will retrieve: woman and women.

Proximity  
Use *near, next,* or *within* to control the proximity of two search terms. You can also enter a number to imply how many words can fall between your search terms. For example, you can make sure the search terms biotechnology and careers stay within five words of each other by entering *biotechnology N5 careers* in EBSCO, or *biotechnology NEAR/5 careers* in ProQuest.

Pro Tip: Not all databases are “created equal”

Search strategies may vary according to which database you are using, and they may differ to the search operators found in library catalogs and web search engines. Some will read a search string left to right while others will always read Boolean commands in a particular order (i.e., NOT may take precedence over AND or OR). Don’t be afraid of a little practice and trial and error; if you have any trouble with any library resource you can always ask a librarian for help.