When searching online databases, you often get too many or too few results. Identifying keywords or phrases and then connecting them using Boolean operators (AND, OR, and NOT), along with the other tools in this guide, can help you narrow, expand, and/or refine your searches to find relevant, useful sources.

**AND**

Using AND allows you to narrow down a search. If you are writing about the ethical concerns of cloning humans, but you only search “cloning,” you will probably get a lot of irrelevant results. If you search “cloning AND ethics AND humans,” however, you will only get results that include all three search terms. In the illustration to the right, your results are where the three circles overlap in the middle.

**OR**

Using OR can help expand your search. OR tells the database to give you results that include any of your search terms, together or by themselves. If you search “cloning OR genetics OR reproduction,” you will get results that only mention *genetics*, *reproduction*, or *cloning* as well as sources that include some combination of these terms. The illustration to the left, shows your results would include each individual term as well as where they overlap.
NOT
Using NOT is another way to narrow a search because it allows you to exclude some results. If you are writing about the science of cloning, but too many of your results are about ethics, searching “cloning NOT ethics” will remove those results from your search.

Quotation Marks
Putting your search terms in quotes ensures adjacent words are searched as a phrase and not as individual words. Searching “successful cloning experiment” without quotes will return results where the database found those individual words anywhere in the source.

Parentheses
When using AND, OR, and NOT, parentheses organize your terms and clarify to the database what goes together. Most databases will prioritize the AND connection, which...
can cause issues. If you search “cloning AND ethics OR law” you will get results for “cloning AND ethics” or “law.” However, if you search “cloning AND (ethics OR law)” you will get results about cloning ethics or cloning laws.

**Truncation**

One more helpful tool is using truncation symbols. If I search “cloning” AND (ethics OR law)” I will get results with the specific words cloning, ethics, and law, but I won’t get results that include words like clone, clones, or ethical.

Adding a truncation symbol to words will alleviate this problem. By using “ethic*” instead of “ethics,” my results will include any word that starts with “ethic.” Notice I had to tweak the way I’m including “cloning” when I use truncation because too many words start with the letters “clon.” (Most databases use * as their truncation symbol but not all. Look in the databases help section to find their specific guidelines.)

Online databases are powerful resources, and it requires a skilled researcher to navigate them efficiently. Finding what you’re looking for will often require testing different combinations of the tools in this guide as well as the built in functions in different databases (for more on database tools, see our “Effectively Utilizing Online Databases” resource).
References