Transitioning to College  
Helping You Succeed  

Activity #2 Creating a Search Strategy  

Objective  
Students will understand how to identify the key concepts of a research topic in order to execute more effective searches in online catalogs, databases, or on the Web. 

Procedure  
1. Have students view the video clip entitled *Talking to Databases*. It demonstrates how to set up an effective search in *Academic Search Premier* (an EBSCO database). Students can also be asked to read *Brian's Search Strategy Advice*. 

2. Reinforce the video by stressing the importance of developing a good search strategy. 

3. Explain Boolean logic by using the *Boolean Connectors* or use one of the Boolean logic links in the *Tips for College: Develop, Use and Revise Search Strategy* section. 

4. Show students how to take apart a thesis by using one of the *completed search strategy worksheets*. 

   a. Demonstrate how concepts listed in each column should be synonyms or related concepts. In one worksheet example children and preschoolers would be in the same column since they define a similar group; children and television would not be in the same column because you can’t substitute one term for the other in a sentence. Children and television are not terms for each other. 

   b. Demonstrate how concepts can be broader or narrower. In the second worksheet example, media is a broader concept than television. Cable television would be a narrower concept than television. 

   c. Explain that sometimes students will only need two main concepts to search effectively, but sometimes they will need three or four concepts. 

5. Explain truncation and how putting a wild card character at the end of a root word will give them more results. For example, preschool* will give them preschool, preschooler, and preschoolers. 

   **OPTION:** If you have time, give students a list of five or six words and ask them to demonstrate how the word would be truncated. Sometimes students like to put the wild card at the end of all words or to truncate the word too early. For example, putting a wild card at the end of teenagers (teenagers*) wouldn’t help much; putting it at the end of teen* would make a big difference in their search results. You can refer students to *Tips for Truncation from Jason*. 

6. Ask students to fill in one of the *Search Strategy Worksheets* for their own topic. Review the worksheets individually with the students and make suggestions on how they might adjust their search strategy. 

7. Remind students that this is a worksheet and is designed to get them started. As they do actual searches in a database or an online catalog, they will discover that some search strategies will work better than others. They will also get ideas for additional terms by reading the abstracts of the articles and/or by looking at the subject headings for book records. 

**Group Work Alternative**  
After students try to complete their own worksheet, have them join with two or three other students. Give them a few minutes to offer each other suggestions for improving the worksheet. 

Then have one person in the group write down all of the topics and their associated concepts on a large piece of paper. Have students post the sheets at the front of the class. 

Provide feedback on a few of the search strategies or quickly go through all of the search strategies for the entire class. 

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http://libguides.library.kent.edu/t2c  
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Combining Search Terms with Boolean Connectors: A Fast Food Example

You have entered a fast food restaurant where 50 people are eating lunch. The following examples show how Boolean Operators work:

<table>
<thead>
<tr>
<th>Connector</th>
<th>Example search</th>
<th>The search will find...</th>
<th>Venn diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>AND</td>
<td>hamburger AND French fries</td>
<td>What if you want to find all of the people in the restaurant who have ordered both a hamburger and fries? You will need to combine the two food items with AND to find the people eating both items. One circle is hamburger; one circle is French fries. The pink part of this diagram shows the number of people who have both a hamburger and an order of French fries on their plates. AND narrows a search, resulting in fewer hits. If we started with 50 people in the restaurant, let's guess that in this example there are 15 people eating hamburgers and fries.</td>
<td><img src="image" alt="Venn diagram" /></td>
</tr>
<tr>
<td>OR</td>
<td>hamburger OR chicken</td>
<td>What if you want to find the number of people in the restaurant who are eating either hamburgers or chicken? You will need to combine the two food items with OR to find the people eating one item or the other item. One circle is hamburger; one circle is chicken. The pink part of the diagram shows everyone in the restaurant who is eating a hamburger and everyone who is eating any item with chicken (chicken salad or chicken fingers or fried chicken). OR broadens a search, resulting in more hits. Out of 50 people there might be 36 people eating either hamburgers or chicken.</td>
<td><img src="image" alt="Venn diagram" /></td>
</tr>
<tr>
<td>NOT*</td>
<td>beverage NOT carbonated</td>
<td>Now you want to find the number of people who have a beverage but are not drinking soda or pop (in other words, beverage NOT carbonated). The circle on the right is carbonated; the one on the left is beverage. The pink part of the circle shows you those people who are drinking juice or coffee or water or milk shakes, but NOT carbonated beverages. The white part shows all the people who are drinking soda, pop, or other carbonated drinks. NOT excludes items you don't want to appear in your search. Out of 50 people, there might be 8 people not drinking carbonated beverages. NOT is a little trickier to use—you will probably not use it as much as AND &amp; OR.</td>
<td><img src="image" alt="Venn diagram" /></td>
</tr>
</tbody>
</table>
Transitioning to College

Helping You Succeed

Tips for Truncation from Jason

Sometimes computers seem to have a one-track mind! Why do I say that? Well, the other day I was searching in my library's online catalog for books on teenagers and smoking. I had done a keyword search by typing:

teenagers and smoking

I got a list of about 30 book titles to choose from, and though some of the titles were pretty good, I still wanted more information. A friend of mine was sitting at the computer next to me and told me that I should try truncating the words. I had no idea what he was talking about, so he showed me this trick:

Many library catalogs and databases allow you to use a **wild card symbol** when you are searching. The wild card for my library's online catalog is the **asterisk** (* -- it's that symbol above the number 8 on the keyboard).

To truncate the term that you are using, find the **root of the word** and then put the **wild card symbol at the end** of the root of a word. When you do this, the computer knows to search for all different endings for that word.

The root word for teenagers is teen, so the truncation would be: **teen**

Truncating my search term gives me books that use any of these keywords:

- teen, teens, teenager, teenagers, teenaged

In other words, I get all the variations of the root word.

The root word for smoking is smoke. This is a little trickier. If I put the asterisk after smoke*, I would not get the word smoking. Truncation adds endings right after the wild card, and smoking is **not** spelled smokeing.

To see the maximum number of words, make the root word shorter and truncate it this way: **smok**

Then you will get:

- smoke, smoker, smokers, smoking

My new keyword search using truncation looked like this:

- teen* and smok*

By using truncation, I helped the computer get off its one-track mind and ended up getting over 60 titles instead of 30. I got books that had chapters on teens and smoking, teenaged smokers, and the effect of smoke on teens. Truncation rocks!
P.S. A few weeks later, I was doing a search for information on the use of ethanol fuel and cars. I thought it would be good to truncate the word car so that I would get car and cars. So I did this search:

ethanol and car*

This was a problem because I got all kinds of strange titles relating to cancer, alcoholism, and plants! Why? When you truncate a short word, you will get all kinds of variations of the word. Just think about how many words start with the letters C - A - R.

Here are some of the combinations the computer found:

ethanol and skin care

ethanol and carotene

a book about ethanol by Joseph Carter

a chapter on ethanol by Carol Goodman

a book with one chapter about ethanol and another chapter about carrots

and a book about ethanol use in cars

When you are truncating a short word, it is usually better to do two separate searches:

ethanol and car

ethanol and cars

Or use the Boolean connector OR for this search:

ethanol and (car or cars)

Truncation rocks, but it can sometimes be rocky.
How to Develop a Search Strategy for the Web, Online Catalog, and Research Databases.

Let’s use this topic as our example:
How does the construction of new baseball and football stadiums affect city budgets and city services?

Search Strategy for the Web

Many of you make the Web your first stop for information. If you are writing a paper on the above topic, you might do a Web search using a search engine like Google. You might type the whole question in the search box or you might type most of the words in the question, like this:

construction of new baseball and football stadiums and city budgets

If you did this search in Google, you would get over 560,000 results. That’s a lot of information to sift through! It’s the reason many of you go to the Web first – because you will almost always get some information for your research.

Remember, though, that some of that information will be good and some of it won’t. You will need to decide which Web sites to use based on Web evaluation criteria found in the Website Usability Activity. There are Web search (advanced search functions, quotation marks around phrases, and limiting to government or organizational sites).

You are probably thinking to yourself, “Why doesn’t he tell me something I don’t already know?”

Okay, what happens when your instructor tells you that you must use at least one book as a reference for your paper? To find books in an academic library you will need to use the library’s online catalog. This means that you will usually need to change your search strategy.

Search Strategy for an Online Catalog

If you try doing the same Web search that you used in Google (construction of new baseball and football stadiums and city budgets)

in a library's online catalog, you will probably get ZERO titles. You might then think to yourself, “This library stinks. There are no books on my topic.”

But wait! Stop right there! Your library does have books on the topic, but your online catalog search needs to be a bit different than your Web search in order to find those books.

First, you need to choose your words more carefully. To do this, you have to pull out the main ideas and combine them together in a search string.

Let’s look at the topic again.

How does the construction of new baseball and football stadiums affect city budgets and city services?
The main ideas are: (1) construction, (2) stadiums, (3) city budgets

Construction is a main idea because you want to get information on the building of stadiums. Building might be another word you could use instead of construction. Keep this in mind for later. You don’t need the word “new” because if you are trying to find out about the construction of something, it automatically means the stadium will be new.

Stadium is another main idea since this is what your paper is about. The stadium might be a baseball stadium; it might be a football stadium. Don’t worry about that now. Start by using the word stadium and then come back to specific types later in your research.

City budget is the third main idea because you are trying to find out about the relationship between stadiums and city budgets. Other phrases that you might use include: “economic impact” or “municipal budget” or “financing” or “cost.” You can leave out the phrase “city services” for now. Knowing how stadiums impact city budgets will eventually lead you to information about the effect on city services.

Now you are ready to do a new keyword search in the online catalog. This time you type in these words:

construction and stadium and city budget

The word AND is a Boolean connector and tells the catalog that you want to combine the terms.

If you do a search with these words and you still don’t get anything, try doing a different search. Sometimes you need to start with just a few words to see what results you get and then build from there!

This time just type the words:

construction and stadium

Instead of zero results, you will probably get a list of several book titles. To find other titles, combine different variations of the words. For example:

stadium and economic

stadium and budget

building and stadium

You can also add a wild card to the root word to get all the different endings for that word. This is called truncation. The asterisk * is often used as a wild card in truncation.

If I put the asterisk at the end of the word stadium, I will find books that use the word stadium in the title or description AND books that use the word stadiums. In other words, I get all variations of the word.

My search would look like this:

construction and stadium*

See Tips for Truncation from Jason for more examples.
When I do an online catalog search using these different combinations of words, I get a list of books including these titles:

*Public Dollars, Private Stadiums: The Battle over Building Sports Stadiums*

*Playing the Stadium Game: Financing Professional Sports Facilities in the ‘90s*

*The Business of Sports*

I can use the book’s call number to find it on the library’s shelves. Many times I don’t need to read the whole book since there will be one or two chapters that have the information I need.

As you can see, searching in an online catalog is very different from a Web search. You have to think more about the words you use, but the results can be very satisfying! You will see that searching in a database requires you to alter your search strategy a little bit more.

**Search Strategy for a Database**

Most of the time when you write college-level research papers, you will need to find journal and magazine articles on your topic. Academic libraries (and many high school libraries) provide databases for you to use. Databases are designed to lead you to the citation for an article. Sometimes you will also get the full-text of an article.

Let's use the same topic:

How does the construction of new baseball and football stadiums affect city budgets and city services?

Remember that the main ideas for this topic are construction, stadium, and city budget. In the online catalog search we came up with other words that mean the same thing as these main ideas. Another way of saying this is that we found **synonyms** for the main ideas. Let’s add to those ideas and create a chart like the one below.

<table>
<thead>
<tr>
<th>Main Idea</th>
<th>Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>construction</td>
<td>building, development</td>
</tr>
<tr>
<td>stadium</td>
<td>football stadium, baseball stadium, arena</td>
</tr>
<tr>
<td>city budget</td>
<td>municipal budget, economic impact, financing, public funds, cost</td>
</tr>
</tbody>
</table>

Many databases automatically give you a series of search boxes for different concepts. This lets you try different combinations of words in the search boxes. You will usually get different results depending on how you change your search. Some of the articles will be the same, but you will also pick up a few new articles each time you change your search.

This is also the place to try using the Boolean connector OR in your search strategy. Using OR expands your search options. It is used between words that are synonyms. You would use it this way:

In Search Box #1 you could type one of the following:

construction OR building

city budget OR financing
In Search Box #2 you could type one of the following:

stadium OR arena

football stadium OR baseball stadium

In Search Box #3 you could type one of the following:

cost or budget

financing or economic impact

Each of these boxes will be joined together by the Boolean connector **AND**. Using AND between concepts helps focus the search. To make it easier to visualize, look at the [Completed Search Strategy Worksheet](#) for topic.

Remember that you can also truncate the terms you are using with the wild card for that database. Financing could be truncated as finan* which "tells" the database to find finance, finances, financial, and financing. See [Tips for Truncation from Jason](#) for more information.

Although this may seem confusing, you will get the hang of it once you have practiced a few times. Overall, just try to think of your search strategy as a game. Use all of the tools available to you, try different combinations of words, and ask for help when you need it. You will reduce frustration and get much better results!

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Preparing Your Search Strategy: Identify Key Concepts

**Topic:** How does the **construction** of new baseball and football **stadiums** affect **city budgets** and **city services**?

**Main subject area or areas:** sports, urban studies, business

<table>
<thead>
<tr>
<th>Concept 1</th>
<th>Concept 2</th>
<th>Concept 3</th>
<th>Concept 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>construction</td>
<td>stadium*</td>
<td>city budget*</td>
<td>Not needed with this example, although you could add a specific geographic region – the name of a state or city or country as a fourth concept.</td>
</tr>
<tr>
<td>OR</td>
<td>OR</td>
<td>OR</td>
<td>If you need to focus your search results, consider adding <strong>city services</strong> as a fourth concept along with types of services (like schools, parks, police, etc.).</td>
</tr>
<tr>
<td>building</td>
<td>football stadium*</td>
<td>municipal budget*</td>
<td>Adding more concepts always narrows your search results.</td>
</tr>
<tr>
<td>OR</td>
<td>OR</td>
<td>economic impact</td>
<td></td>
</tr>
<tr>
<td>development</td>
<td>baseball stadium*</td>
<td>financ*</td>
<td></td>
</tr>
<tr>
<td>AND</td>
<td>AND</td>
<td>cost*</td>
<td></td>
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<tr>
<td>AND</td>
<td>AND</td>
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<tr>
<td>AND</td>
<td>AND</td>
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<td></td>
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<tr>
<td>AND</td>
<td>AND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Think about different endings for your words. Use the **truncation wild card** when appropriate. The **asterisk** * is commonly used. For example: **financ*** will give you finance, finances, financial, financing.

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Preparing Your Search Strategy: Identify Key Concepts

Topic: What is the effect of television violence on children?

**Step 1:** Circle the main ideas (terms) of your topic.

**Step 2:** Write each term in a separate concept column. Sometimes you will only need two columns; sometimes you will need four.

**Step 3:** Think of words that mean the same as that term (synonyms) and write them in the correct column.

**Step 4:** Think of multiple endings for your term and “truncate” it so that you remember to search this way.

**Truncating Tip:** Find the root word. Add an asterisk to get multiple endings. Teen* = teen, teens, teenager, teenagers, teenaged

<table>
<thead>
<tr>
<th>Concept 1</th>
<th>Concept 2</th>
<th>Concept 3</th>
<th>Concept 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>television</td>
<td>violen*</td>
<td>children</td>
<td>You don’t need a fourth concept in this search strategy.</td>
</tr>
<tr>
<td>OR tv</td>
<td>OR aggression</td>
<td>OR teen*</td>
<td>AND</td>
</tr>
<tr>
<td>OR media</td>
<td>OR aggressive</td>
<td>OR toddler*</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** You can also try searching by using the entire phrase “television violence” -- although you will get more results by entering television AND violence.

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Preparing Your Search Strategy: Identify Key Concepts

Topic: ____________________________________________________________

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