

2 BECOMING A SEARCHER

2.3 SEARCHING DATABASES

GOAL

Participants will develop confidence and competence in creating sound search statements for EPIC databases and gain insight into general search strategies that can be deployed across all of them.

OBJECTIVES

Participants will:

- Understand what a database typically is and how they are distinct from websites
- Develop confidence in working with the interfaces and features of some key databases, and competence in navigating the resources
- Acquire some general search strategies that may be used across a range of databases
- Start to build awareness of the content of some key EPIC databases.

NEEDS ASSESSMENT

Trainers will ask potential participants PRIOR to attendance:

- Which databases do you regularly use?
- How would you cover for possible variations in the term 'child' (children, kids etc) in a database search?
- What would be your first action if your initial search returns no hits?
- Would you search for phrases in databases in the same way as in Google?
- How would you find out if a particular magazine is covered in a database?

If the trainer is confident in the potential participants' ability and understanding of most of these questions, then they may not need to complete the entire session. A potential starting point in this case would be from the 'Creating successful search strategies' section, treating it as a refresher and discussion exercise.

2.3 TRAINING CONTENT: SEARCHING DATABASES

DURATION OF SESSION: 75 MINUTES (EXCLUDING OPTIONAL SECTIONS)

Content	Duration	Key Points	Practical
Session Objectives	2 min	Context (relation to earlier sessions). Intro library databases and rules and strategies for searching them.	
Nature of 'databases' compared with Web resources	8+ min	Are they distinct? In part but a lot of variability. Quality 'databases' such as Te Ara or online business directories (eg. UBD) may exist as free Web resources - pay or free is not the issue. 'Database' is a loosely used term - with increased digitisation the distinctions are being lost. Conclusion: Just think of all as 'online resources' and focus on knowing what's in them and how to get it out!	1. Participants asked to search for "edmund hillary" in both Google then ANZRC and open 1 article/item, then describe the differences ('field' structure; published content, busier interfaces...) 2. Participants asked to search for 'floods' and open an item in EBO (half group) and Te Ara (other half). Groups then swap PCs to quickly view and compare results. Asked to comment on any differences in structure with ANZRC? ...and what does this tell them about databases? [no set format, may be applied to any online information resource?] + ask whether there are any differences in quality between the free-to-use (<i>Te Ara</i>) and pay-to-use (<i>EBO</i>) encyclopedias?
Scenario (the context)	3+ min	An information need: continue with the Y12 topic of s2.2 (refer to): "the effects of violent video or computer games on young people"	Refer to topic analysis of s2.2 and the initial keyword search of: <i>young violent games</i> . [If need be refresh by asking them to run and examine this Google search first]
Search Basics: How do databases work? How do they differ from Web Searching?	15+ min (excl. optional)	Search screens ('interface') look complex cf. <i>Google</i> . Need to figure if work in same familiar way or not? 1-2. Alert! <i>Google</i> strategies don't necessarily translate directly. Need to insert ' AND ', to ensure ALL words are present in any one source. <u>Phrases</u> though can be treated the same way as <i>Google</i> . [NB. If want consistency keep ' AND ' in uppercase – some databases require this]	1-2. Participants asked to log on to OVRC and try searching for: <i>young violent games</i> just as in <i>Google</i> , with <u>keyword</u> search button selected. Asked to comment on why results are poorer than expected? [Only 1 hit?] If don't resolve then prompt to try search as <i>young AND violent AND games</i> and comment on difference. Then ask to try searching on 'violent games' as a phrase as was done in <i>Google</i> : <i>young AND "violent games"</i> and comment on whether has worked? [yes,

		<p>3-4. Handling potential word and concept variations: some similarities to Google (eg. 'OR' option) but no automatic stemming but can use asterisk in all databases to search on stem/root of word.</p> <p>Have now found four basic 'rules of thumb' [Handout Checklist]:</p> <ol style="list-style-type: none"> 1. Often no default 'AND' - need to insert between concepts 2. Phrases handled variably - stick to using "... " to denote 3. Can use stemming operator (asterisk) to handle variable endings 4. Can use 'OR' operator to search on word alternatives as in Google, but wrap it in parentheses <p>Quite a lot of coincidence with Google searching - just keep in mind the few differences.</p>	<p>though not many]</p> <p>[Optional exercise to consolidate rules 1-2]: Repeat the process for the search terms: <i>children pressure peer vs. children AND pressure AND peer vs. children AND "peer pressure" (all as keywords)</i></p> <p>3. Participants asked how Google dealt with variable endings such as 'child, children...' [[automatic stemming] and alternative words for similar/same concept? [refresh if need be]</p> <p>Participants asked to search in OVRC for <i>teenagers AND mood (as keywords)</i>. Note if results include 'teen, moody' in bolded terms? Then asked to repeat search as <i>teen* and mood*</i> and note differences.</p> <p>4. Participants then asked to suggest how would search for concepts like 'young' that have alternative expressions (youth, kids...)? [Prompt the 'OR' operator used in Web searching]. Asked to search in OVRC for: <i>young OR teen AND violent AND games</i> and look at <i>Magazines</i> or <i>News</i> results [Not very relevant]. Ask what's wrong/needed? If need be prompt to try with parentheses: <i>(young OR teen) AND violent AND games</i> and note improvement.</p>
Break Here			
Successful Search Strategies	30+ min (excl. optional)	<p>Context + intended coverage: Now know some of the 'rules' of the game. Also need a good game plan, including a 'Plan B' or 'C'? if Plan A doesn't work!</p> <p>1. Useful strategy is to try a few keyword searches (on prime concept) to 'fish' for 1-</p>	<p>1. Participants asked to assume they're the student researching their topic asked to rerun the search:</p>

	<p>2 relevant results, see what subject headings are assigned, then rerun or modify the search using these headings.</p> <p>The headings are subject 'tags' or labels, consistently assigned to articles whatever words are used in text of article. They give us greater certainty or control compared with depending on particular keywords to be present – can be a bit hit & miss. (A useful feature that Google doesn't have!)</p> <p>2. Get analytical - use your topic analysis to provide a 'plan b' and systematically try variant keyword terms on one concept while you keep the other(s) constant. Change only the ones most likely to have different possibilities – don't change everything at once! Try concepts broader in scope only if you have failed with all potential alternatives.</p>	<p><i>young AND violent AND games</i> in OVRC</p> <p>NB. Can all the results be seen? How many in total? [different set under each tab]</p> <p>Now consider that while there is some relevant stuff, how would they allow for a range of other possible terms ('youth, kids, video games...')? [Can use OR' but very complex or clunky if more than one option]. Ask them to open one relevant article (eg. #3 'Media violence...')? and note <i>Related Subjects</i> terms to left. Ask what these are? [subject headings] How they get there? [human indexers assign them]...how they might be useful? [Can use them to get a more precise or wider scope of search].</p> <p>Seems 'Video games' is the heading for any games of this nature and 'Youth violence' is assigned to some relevant articles, so suggest rerunning search as: <i>Video games AND Youth violence</i></p> <p>And note how much more relevant the results are - especially under <i>Magazines</i> and <i>News</i> tabs.</p> <p>Perhaps too selective though (eg. few under <i>Mags</i>) so ask how we could broaden it a bit? Prompt for: <i>Video games AND violence AND young</i> or even just: <i>Video games AND violen*</i> seeing as the issue generally relates to the young?</p> <p>2. Another student in same class takes a different tack and wants to "find reports in newspapers (including NZ ones) on the effect of video-type games on the mood of teenagers" Participants asked to open ANZRC (as includes NZ newspapers) and try the search: <i>"video games" AND teen* AND mood*</i> (ensuring Also search within the full-text... is <u>not</u> ticked)</p>
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		<p>Conclusion: These three strategies may be confidently used even when faced with a database we have not used and/or a topic that has concepts we may struggle with.</p> <p>[Optional] The concepts can be assessed and reinforced by trying the same general approach in a completely different database.</p>	<p>Student notes a few NZ articles in list but asks how could get more covered? [Elicit could search on specific NZ newspaper(s)]. Return to Keyword Search page enter: "video games" AND kid* then ask how could limit search to just say the 'Dominion Post' (or other title of choice)? [Prompt <i>Publication</i> search box]. Enter publication name and examine results. Note again no subject terms.</p> <p>[Optional #1: consolidation exercise] Another keenly intelligent student in class working on similar topic is researching the broader topic of "the impact of media violence on youth". She has searched EBSCO databases and says that "while they gave her some useful stuff from social science and current affairs type sources she was hoping to find some more material based on scientific, experimental or health based research?" How can you help? [Prompt try another database] Logon to: ProQuest Science Journals</p> <p>Ask how the interface appears if new to them?... and what should focus on? Lets try the same keyword 'fishing' approach used for Gale database: <i>youth AND "media violence"</i> Ask: only few hits but are they relevant? Has our search worked? [Yes, though not picking up much] How can we improve our search to get a better return? Ask - what are terms at top? [<i>Suggested Topics</i> but are subject headings]. Which most useful...? [Can select a relevant subject heading and rerun search + a keyword if need be] eg.: <i>Children & youth AND Media AND violence</i> NB. Can copy and paste the heading into search box at bottom to make it quicker.</p>
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		<p>[Optional] 4. Other useful search features: Some of the databases provide forms of searching unique to their topical area. Cant cover them all but a typical feature is that provided by <i>BRC</i> which allows structured browsing to find and select from lists of famous people in particular categories.</p>	<p>Ask if generally pretty relevant? Why have we picked up more using the Subject Hs? Ask: How are they ranked here? [By date?] How can we get a Google-like relevance ranking? [<i>Sort results</i>]</p> <p>Ask if they feel the approach has worked/transferred ok across to another database? [Yes?] What would they suggest are the benefits of this generic strategy to searching database type online resources?</p> <p>[Optional #2: Resource Specific features] 4. A student says as another part of their assignment they have to identify and write a bit about a notable 'child psychologist'. She doesn't however have any names – ask participants what kind of database we might use [a 'biographical' one]. Ask them to open Biog RC and consider how they might search for this without a known name? Prompt the <i>Biographical Facts</i> search > drop down menus. Ask them to select from the <i>Occupation Terms</i> list [<i>Child Psychologist</i>]. Choose one person from list and find material on them.</p>
Recap	4 min	<p>Consolidation [key step!] Review what covered: key rules of thumb, useful strategies. Reinforce it will need and ongoing use to consolidate and build confidence.</p>	<p>Ask participants to recall: 1. Some 'rules of thumb' to observe when using any database? 2. Some useful search strategies that will apply across any database? Handout copy of <i>Database Searching - Basics Check List</i></p>

2.3 SEARCHING DATABASES

WHAT ARE DATABASES?

Traditionally a 'database' has been regarded as a collection of records made up of number of 'fields' such as title, author, date, notes etc. A library catalogue is a classic example but they can take many forms. And they may or may not include the attached or linked to 'full text' of whatever item the record describes. The word however is used very loosely these days - particularly with increased digitization of all sorts of material - and just about any collection of discrete items of information may be called a 'database', from online telephone directories to real estate listings. Most of these don't have the classic field structure or if they do it may be hidden to make it more readable.

The suite of EPIC resources reflects this diversity. While there are some that appear more like conventional databases, such as *Aust/NZ Reference Center*, *General OneFile*, or *ProQuest Science Journals*, there are others that appear more like online collections of reference books: *Encyclopedia Britannica*, *Oxford Art/Music Online*. And you have a few that are bit of everything like the *Heath & Wellness Resource Center* which includes a medical encyclopedia and dictionary, pharmacopoeia, pamphlets, directories, newsletters and journals – certainly not one coherent 'database'. Some have a core similar to the print form, like *Encyclopedia Britannica*, but then throw in a lot of other enrichments - images, video clips, links to websites - so that they are considerably more than the multi-volume set you see on library shelves, and generally more current.

Conversely many websites are quite database like in the resources they may provide – directories, collection descriptions etc all with search interfaces to retrieve individual listings or 'records'. And while some of these are freely available to anyone others, as with the EPIC suite, are made available only to registered customers or subscribers. The pay-to-use vs. 'free' distinction is also clearly no divider of quality if we look at some of the new free online NZ resources that are being created, either 'born digital' such as *Te Ara*, or digitized from classic works such as the NZ Electronic Text Centre collections. *Te Ara*, the new government sponsored NZ encyclopedia, has as firm an editorial control and production values as *Encyclopedia Britannica*.

In general however we can say that the EPIC databases are a prime source for searching for and retrieving the full text of published, print documents – magazine, newspaper, encyclopedia and other reference handbook type articles. In this they are different from Library catalogues that generally only provide us with a record and location of a work but not the full thing - they have the significant advantage of immediate viewing and delivery.

The distinction then between a database and a website is not as important as understanding what sort of content is in any online resource and how to get it out. The issue of what to call these resources is more of a problem when we want to promote or explain them to users who may be confused or intimidated by the word 'database'.

GETTING TO KNOW THEM - SEARCH BASICS

The most obvious thing confronting us when we first look at any database is how complex the interface (search screen) looks compared to the clean simplicity of *Google*. Although many databases are evolving simpler, more *Google*-like interfaces, we are still presented with a range of options, buttons, and text that initially can be quite intimidating. The reassuring news though is that we don't have to be on top of all the options and features to become an effective searcher. Many of these are features that may be 'cute' or occasionally useful, but are not essential. The initial focus should be on

understanding how to use the basic, keyword type search interfaces which will satisfy a significant proportion of our needs. Once these are second nature then the other various means of searching can be explored, in your own time and as your needs require, from a position of confidence and far less confusion.

The starting point for many will be 'does it work like Google?' given that is often seen as something familiar and friendly. And if doesn't, in which ways is it different? With the large number of databases about (currently 20+ in the EPIC collection alone and growing) it is difficult to be absolute about the differences as there are subtle distinctions between how each does work. There are however a lot of common search features among them as well as with Google, especially if we stick to the basic search interfaces. A good starting point then is to try a few searches and see if we can work out some general conclusions about where and how they work differently. This will give some rough rules of thumb to guide us when we first confront a database interface and give us more confidence when approaching any unfamiliar or little used online resource.

To And or Not to And...?

Take a typical not-thinking-too-about-it-too-much Google search like *bird flu deaths* (a few commonly used key words thrown in) and try it in say a Gale database - we may get a suspiciously low number of results for such a popular topic. This provides the first evidence that databases may handle things a little differently. Look closer at the results and it will be seen that the database is treating it like a phrase search, not individual keywords. Then we recall from our Web searching in s.2.2 that Google automatically assumes an 'AND' between search terms, requiring all words to be present for a source to be retrieved. These odd results suggest databases probably require us to insert an 'AND' between two or more concepts, and that they will take any string of words without the 'ands' between them as a being a phrase. So, *bird flu deaths* (= "bird flu deaths" in Google) will certainly less commonly occur in articles than that of the phrase "*bird flu*" AND the word *deaths* somewhere else in the piece. So, discovery number one. Note also that a few databases require the 'AND' to be in uppercase – if you don't want to have to remember which ones do you could adopt this as standard practice. Database vendors are gradually moving toward making their search functions more Google-like and some (eg. EBSCO) now offer search options that don't require the 'AND' such as a 'search on all my terms' or similar.

Can You Quote That...?

When we try Google type searches in databases we also find that the quotes ("...") required to mark off phrases, names etc are at times not essential. Some of the databases take any string of words (without an AND or OR between them) as a phrase by default. But for the comforting sake of consistency we can keep using the "..." as they will be ignored if not needed. So keep quoting – conclusion no. 2.

Too Much Choice...

One of the challenging bits of any search is how to account for all the possible variations in word endings or alternative words to express similar concepts. Google you will recall had some neat little features like automatically stemming many words, and the '~' similar words operator. Many of the databases are not quite this helpful however and you'll find you will have to be a bit more proactive to handle these sorts of possibilities.

For stemming (or 'truncating') a word the asterisk (*) works across all databases (eg. *mood** will search on *moody*, *moodiness*...) and to allow for varying word or concept options we can, like Google, use the OR operator. So, *teen OR youth* as a search statement is easy enough to understand, but it gets a little trickier when we want to combine these alternatives with another concept as we then have to enclose them in parentheses: *mood AND (teen OR youth)*. And if we want to get fancy we could use both means of providing for alternatives in one search i.e. *mood* AND (teen* OR youth)* to cover a range of possibilities. Discovery number 3.

Don't Stop Now...

Like Google, the databases also have a number of very common 'stop' words that they don't search on - words like *the, a, of, on, in, with, for* etc that don't normally add much meaning and would slow the database down if it had to index and search on all the these. Sometimes though they can be important, as in certain phrases or book titles. As in Google they can be forced into inclusion by putting them into a phrase e.g. "*rights of children*" - except in EBSCO databases where they remain ignored whatever you do! Some databases, where such words are vital, will provide a specific option underneath the search box to opt for 'all words entered', or 'exact title' as in the *Literature Resource Center* title search. Point number 4 to bear in mind.

Conclusion

Various databases have other ways and means of crafting search statements designed to assist or provide options useful for their specific topic areas. You will get to know and use these with experience, but in general you can confidently create successful, keyword searches using the basic (not 'advanced') search facility, taking into account just the four 'rules' sketched above. And, as we have seen, they have a lot of comforting coincidence with Google searching. Just keep in mind the few differences. A *Checklist* is provided at the end of this section.

CREATING SUCCESSFUL SEARCH STRATEGIES

Knowing how to group and connect the words in a search statement is only half the battle. This understanding gives us the core 'rules' (of the game) but we also need to have a sound game plan i.e. a search strategy. And if prudent, we also need to have a 'plan B' (or even C!) for when plan A doesn't come off.

Creating successful search strategies is a skill that is built with experience, and there are particular strategies exploiting specific database features that can enhance the process. There are however a few broad strategies worth pursuing that apply to just about all databases and which can provide a reasonable level of success.

Go Fishing

A prime strategy exploits a feature of most of the databases that Google doesn't have - the subject headings. These headings provide consistent topic descriptors (like 'tags' or labels) assigned by indexers to like articles (sometimes termed 'controlled terms'). Google by contrast can only draw on the keywords actually existing in the Web pages. If we can find the relevant assigned headings we can then use them with some assurance that our search will be either more precise and/or increase the number of relevant found articles. The problem is how do we know what headings are used? (They are generally not the same as those used in our library catalogues). One approach that often works is to go 'fishing' for them by a keyword search on our main concept, find a relevant article or two and then note which subject headings are associated with these.

For the EBSCO and Gale databases the subject terms are presented as lists of related headings on side panels to the left of the results; in ProQuest above the results (*Suggested Topics*); and in Oxford as 'Subject Entries' in the initial results. Only Encyclopedia Britannica doesn't provide them. A basic example of the strategy would be to do say a simple keyword search on *bird flu*, note the subject headings that come up in association with any relevant articles (in EBSCO databases for example we are told use *Avian Influenza*) then use this heading to rerun the search with any required qualifiers (e.g. *avian influenza AND deaths*) confident that we will then pick all the articles with bird flu/avian influenza as a principal topic. Note that while we are now using subject headings as keywords in basic searches this doesn't really matter as the systems will

search across all the subject terms as well as keywords and saves us having to think about how it might handle subject searches (quite variable).

So we 'fish' with the hook of a few likely keywords, hopefully catch a relevant article or two, see what subject headings are assigned or related to these, and then cast our net wider by using the headings in a revised search.

One point to note in finding relevant articles through 'fishing' is that many databases display their results in date order as the default. This is useful if being up-to-date is the most important factor but not so helpful if you want to quickly find relevant items in a long listing of results. Look for the 'sort by' feature (often at top right of the results) that enables you to quickly re-sort the results into most relevant first. Note that some databases don't provide such 'sorting' from subject (as opposed to keyword) searches.

Plan 'B' - Get Analytical....

Should your initial 'best bet' search statement fail you will need an alternative to try - if you have done your topic analysis this will be at hand! The key thing is not to get too haphazard with new attempts - keep the most likely term(s) constant while you try equivalent words for the other concept(s). If they fail (and only then) move to broader concepts to see if you can find the information sought within articles of a wider scope. You should eventually get a relevant hit on one combination and once you find one then you can revert to the 'fishing' strategy above.

An example could be looking for info on the 'impact of exercise on the mood of teens'. We could start with a search on the preferred terms: "*physical activity*" and *teen** and *mood**. If this fails then we should hold 'teen' constant, as it is probably the strongest (most likely to be used) term, and try possible options for the others eg. we could first vary the 'mood' concept (say try *feeling**, *emotion** or *esteem*) or try substituting exercise for "*physical activity*" with the others constant. If these are still not productive then consider removing the mood concept altogether to broaden the search.

Take it to the Limit(er)s

Another useful feature of the databases for sharpening up our searches are the various options provided to limit a search to a particular type of document, reading or audience level, geographical area, time period etc. This is similar to the way in which Google allows us to select for and search on certain forms of resources such as images, books or news, but databases often provide ways to do this after, as well as before, searching. Most have some way of taking a 'slice' of the initial total results of a search to present only:

- material from reference works (many Gale databases)
- academic/peer reviewed/scholarly journals ie. research level as opposed to magazine type articles (in most)
- a geographical area (eg. Aust/NZ newspapers or magazines in ANZRC)
- primary sources (history and current affairs databases)
- multimedia material (images, video clips...)

These post-search limiters often take the form of 'tabs' at the top of the results that you can click on to present just that form of material. Some of the more specialist ones will have tabs for material specific to their area eg. health 'pamphlets' in *Health & Wellness RC*, or 'literary criticism' in *Literature RC*. With most of the databases we can also select for 'peer reviewed' or 'academic' material prior to searching by ticking the options box under the main search box. *Encyclopedia Britannica Online* provides distinct, age appropriate versions of the whole encyclopedia that you can choose to limit yourself to prior to searching, or select from the result lists according to suitability. Most will also provide a means to limit to a particular date or time period. Some provide this through drop down menus or boxes under the search box; others allow you to re-sort a search to 'by date' or 'most recent' if that is not already the default display.

Note that while the majority of the material in the databases is in 'full text' (i.e. the full article or item, not just an abstract or citation) a varying proportion isn't, particularly some NZ magazines in some databases. Much of the time we will want to retrieve the 'full text' not just a summary or citation. This is an obvious first point of limitation but can affect the success of our 'fishing' strategy by prematurely excluding relevant items that may lead us to useful subject headings. So be a bit cautious in adopting this as an initial limiter.

Act Local

Some of the databases provide forms of searching unique to their topical area. While all of these can't be described here you will find many with a little exploration and can use them according if they seem helpful. A typical example would be the *Biographical Facts Search* in *Biography RC*. This is useful when say you want to research a 'famous' aviator, scientist, explorer' or whatever, but are not aware of many names. Here you can select from drop down menus to find a list of notable people in a your chosen category. You can then select a name from this and then link to the information in the database. *Literature RC* and *Oxford Art/Music Online* also provide similar sorts of browse and select options for categories of people, periods, nationalities, regions etc.

CONCLUSION

These core strategies and 'rules' for searching databases are summarized in the attached *Checklist*. Consistent application of them in the basic keyword search interfaces will get you to a point of success for many searches. There are other valid strategies but stick to a few consistent approaches you feel comfortable with while you are developing skills and confidence. With experience you will gradually pick up a wider range of strategies specifically applicable to the resources you use most often.

As you get more adventurous you might like to look at the 'advanced' interfaces that many databases (and even Google) provide. For some searchers these provide a structure or series of prompts that they find helpful but it often requires more 'learning' for each individual database to figure out what exactly is required to be entered. Many 'advanced' interfaces are in fact no more sophisticated, they just provide more structure and/or limiters, but with a time cost to use. In reality there is no one 'best' way to search - it is always related to the range of information needs you commonly face in your library, your individual style of thinking or perhaps models you have adopted from others and feel most confident with. If it consistently works its good - but just check yourself occasionally by trying variant approaches to ensure you are not falling into habits that are familiar, but not necessarily the most effective.

The most productive way to develop skills and successful strategies is to learn from failure. Whenever you finish a search where you are left with the feeling that the approach didn't provide what you hoped for, make a brief note of it and then rerun the search when you get a quieter moment with one or two other strategies. This trial 'play' can teach you much that may be difficult to pick up in the often more pressured situation of working through a 'live' process.

DATABASE SEARCHING - BASICS CHECK LIST



THE RULES

Connectors (operators)

Most databases require you to use '**AND**' between the concepts you are searching for **eg. SUV AND safety**. If you don't it may default to a phrase search. An uppercase AND will work consistently in all databases.

Phrases/Names

Denote a phrase (name, specific order of words...) using double quotes **eg. "british isles"**. It will either require or ignore these quotes. Some resources provide specific 'button' options to enter a name or title.

Providing for Alternatives

Use an '**OR**' between either/or options for the same concept, wrapping them in parentheses **eg. (SUV OR 4wd)**. The asterisk (*) will allow you to search on the stem of words **eg. diet*** covers also **diets, dietary**.

Common Words

Avoid common words like '**and, or, with, an, the, for, how...**' as these are not usually searchable unless enclosed within a phrase.

KEY GENERAL STRATEGIES

Go Fishing

'Fish' for a relevant article through a keyword search, note the associated **subject headings** and rerun a basic search using these headings (plus keywords if need be).

Get it Sorted

Many databases default to date order. A Google-like **relevance** ranking is often more useful to evaluate searches. Look for a '**sort by**' button.

Plan 'B'

Get analytical - use your topic analysis to systematically try **variant keyword** terms on **one concept** while you keep the other(s) constant. Try concepts broader in scope only if all likely alternative ones fail.

Take it to the Limit(er)s

If an initial search has a bit of useful stuff but a lot of irrelevant, try sharpening it through limiting options such as:

- '**tabs**' (at the top) or '**facets**' (to the side) of the search results to select the **type of material** that best matches your needs - reference, scholarly journals, news...
- date or time **period** drop down **menus** or **buttons**.

Act Local

Look at the search screen options - are there **specific database features** or limits offered? If so do they provide a more precise or easier way of searching that better meets your needs than the basic search option?

AND IF ALL ELSE FAILS

Click on the '**Help**' or '**Search Tips**' link (there always is one!)