



Search like a Ninja

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► All about you

Share with us:

What's your searching experience?

What do you hope to learn today?

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▶ Acknowledgement of Country



▶ Housekeeping

- Wifi
- Toilets
- Evacuation



► What's today about?

- Sharpen your search skills and build a practical toolkit
- Explore different types of searches
- Use emerging technologies to identify high impact search terms
- Explore different searching tools & functions
- Reverse engineer a topic search
- Consider the future of search

► Back to you

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Discussion: Building on your base

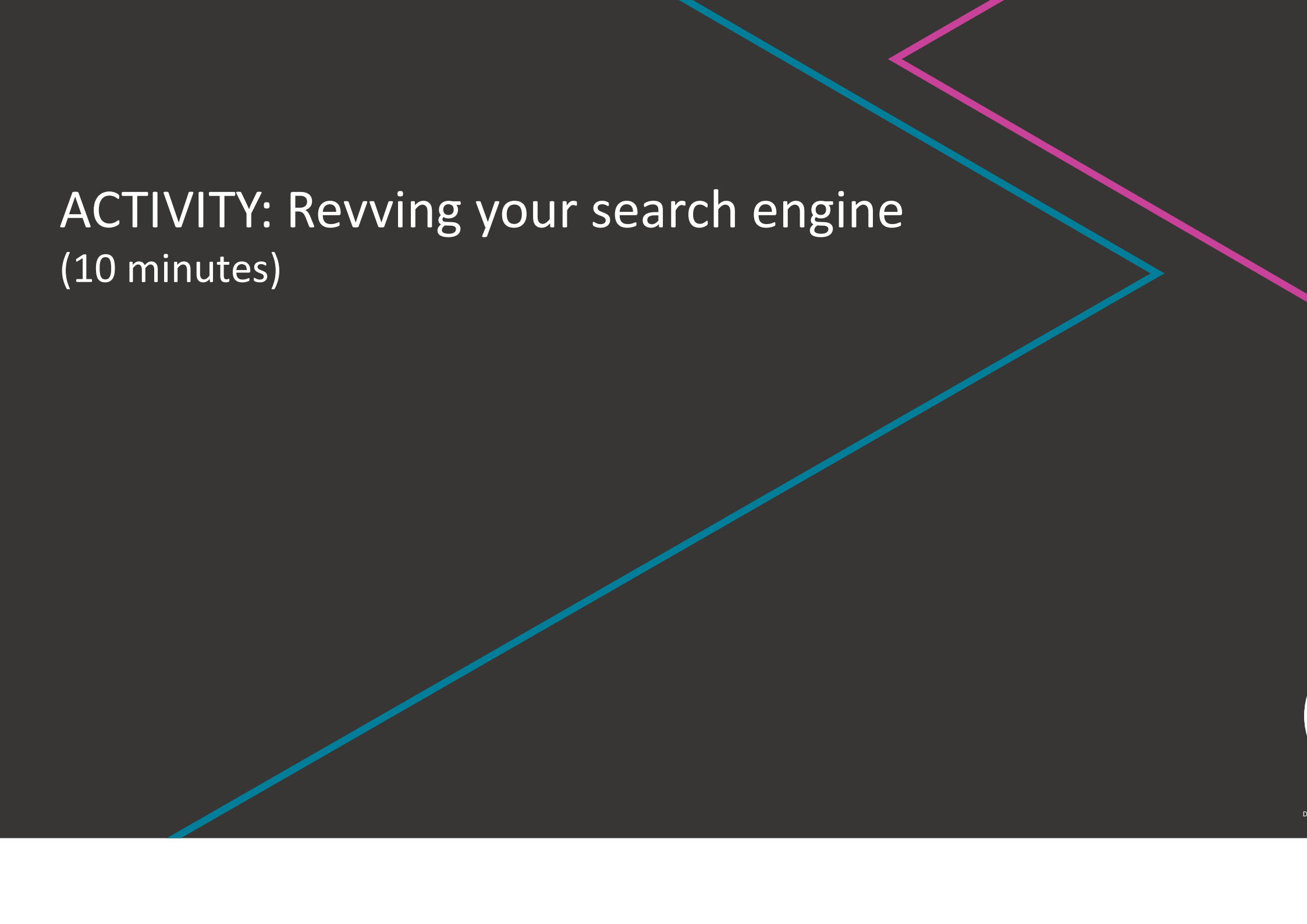
(10 minutes)

- Introduce yourselves and share:

how you usually search
a favourite tool
a tool you don't like

► Identifying high impact search terms





ACTIVITY: Revving your search engine

(10 minutes)



Revving your search engine

Google! I'll just ask a question?

- Powerful internet search engine – particularly useful when searching for material not contained in subscription databases.
- Find grey literature – working papers, government reports, blogs, and of course, webpages.
- Asking a question via the search bar (which we commonly do) is an unfiltered search that can yield overwhelming results.

Why use Advanced Search? (Wait... Google has an Advanced Search?)

- Limit to certain domain names
- Specify file types – does not have to be a website!
- Avoid (possibly?) some of the algorithm, ie. ranking system, YOUR search history.
- Employ search operators in a clearer mode – more to come on these soon...

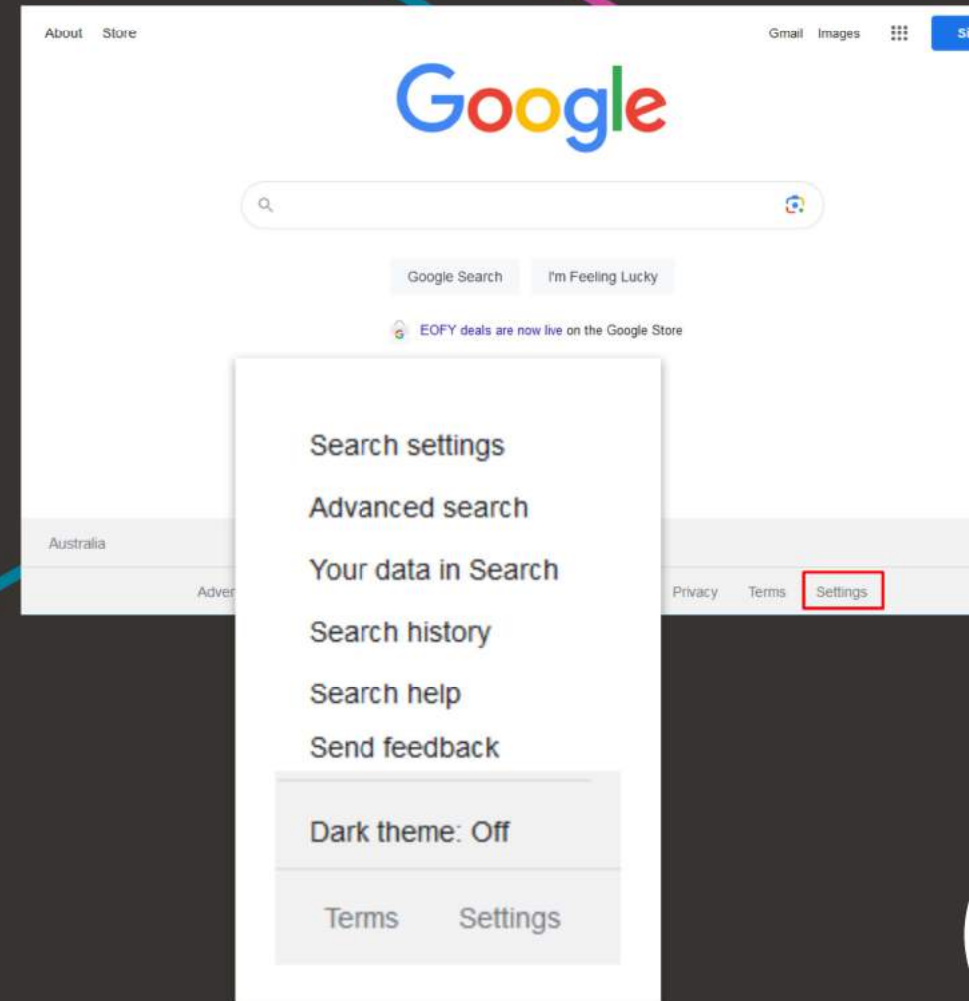
If not Google, then... There are still other search engines to try! Duck Duck Go...

ACTIVITY: Revving your search engine

(10 minutes)

Quick comparison:
Question vs Advanced Search

Explore:
Locate a government document about
creative arts industries/academic
integrity.



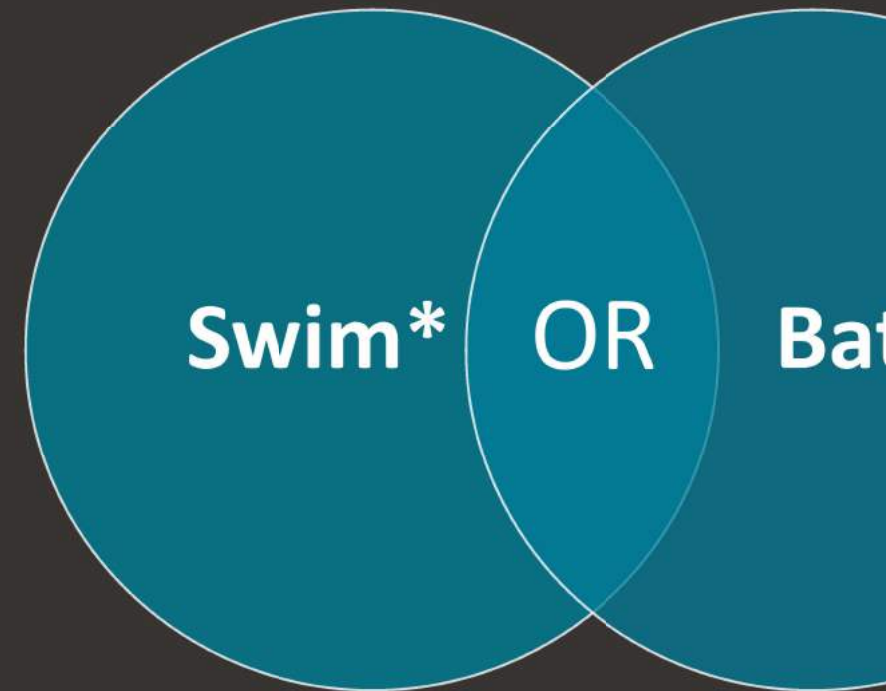
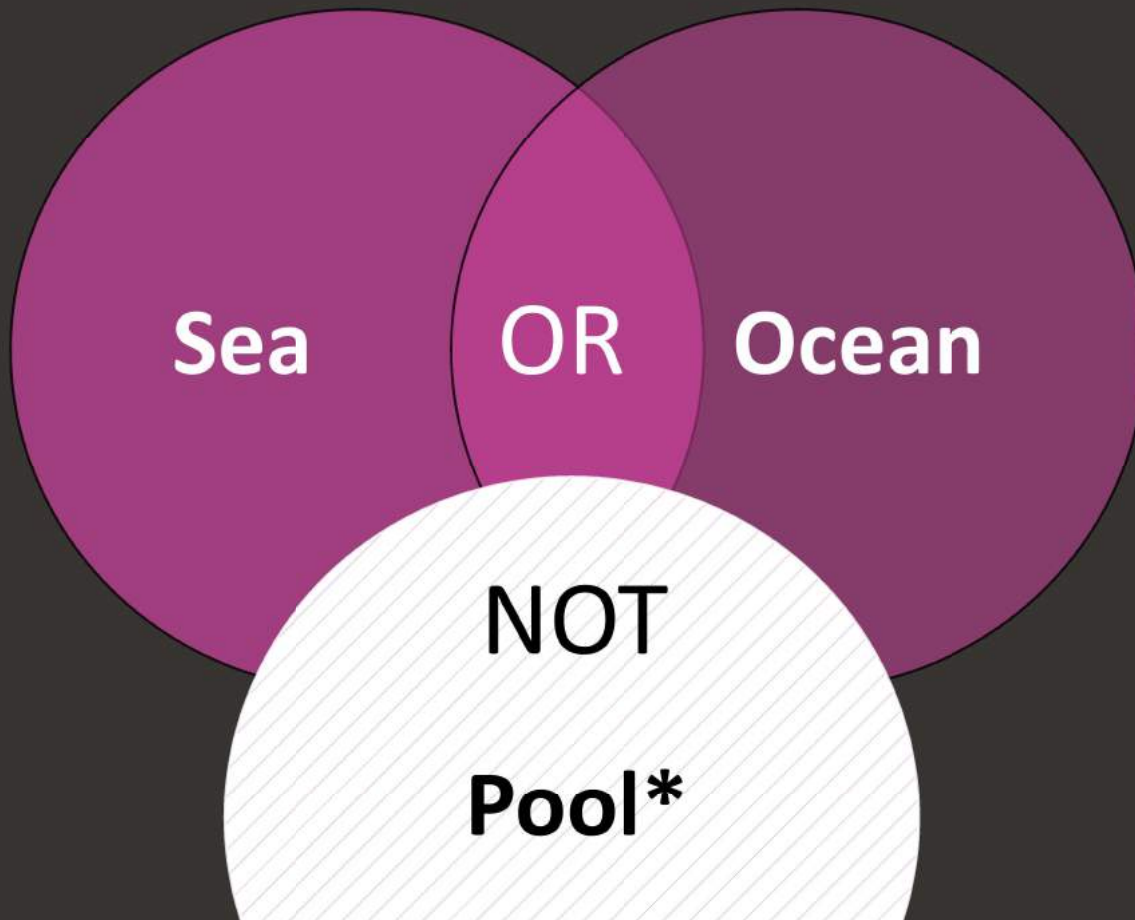
Refresher: Search planner

Question: What are the health benefits of swimming in the ocean?

Concept 1: Water body

AND

Concept 2: Swimming

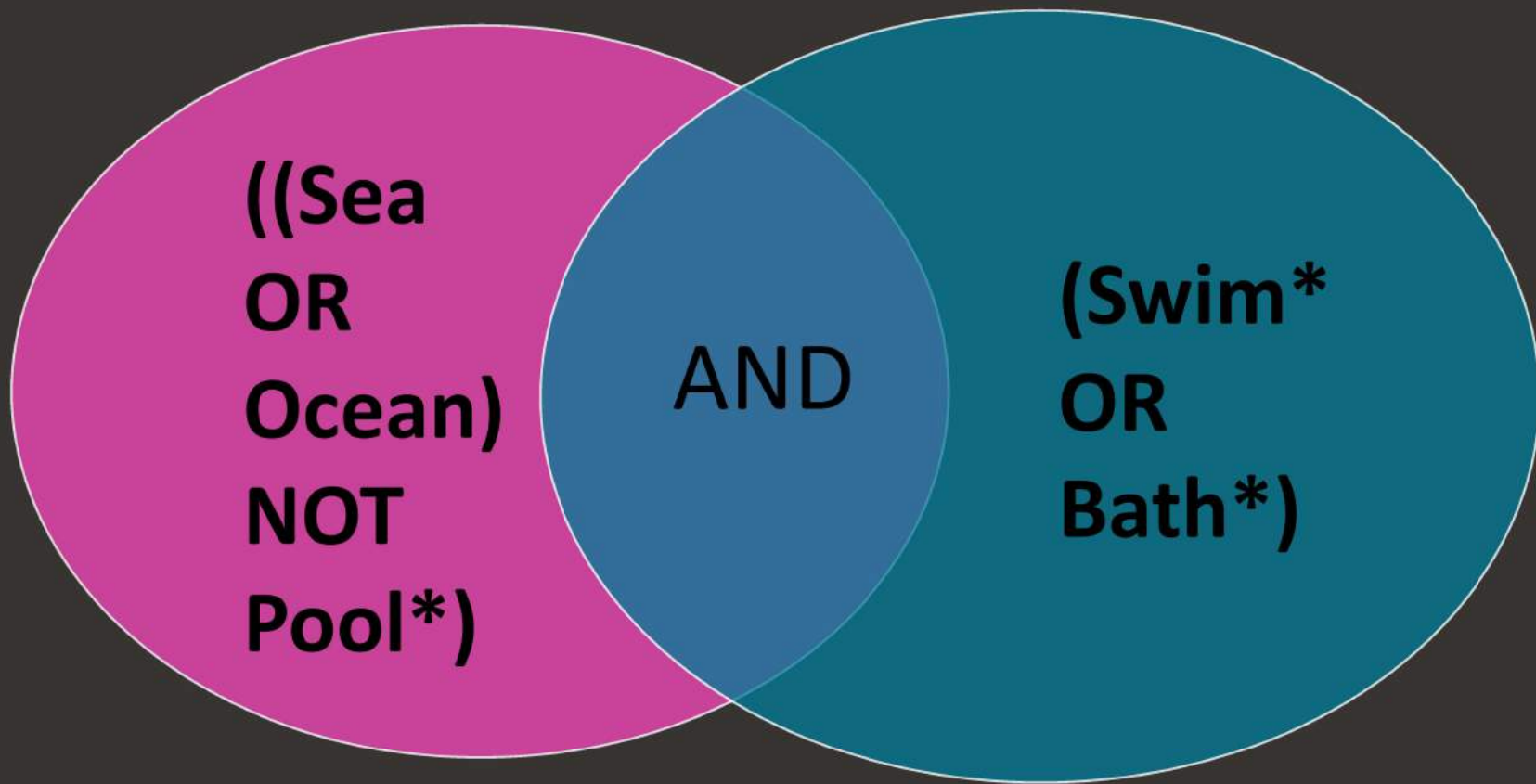


Refresher: Boolean logic

Question: What are the health benefits of swimming in the ocean?

Concept 1: Water body

Concept 2: Swimming



Refresher: Search planner

Question: What are the health benefits of swimming in the ocean?

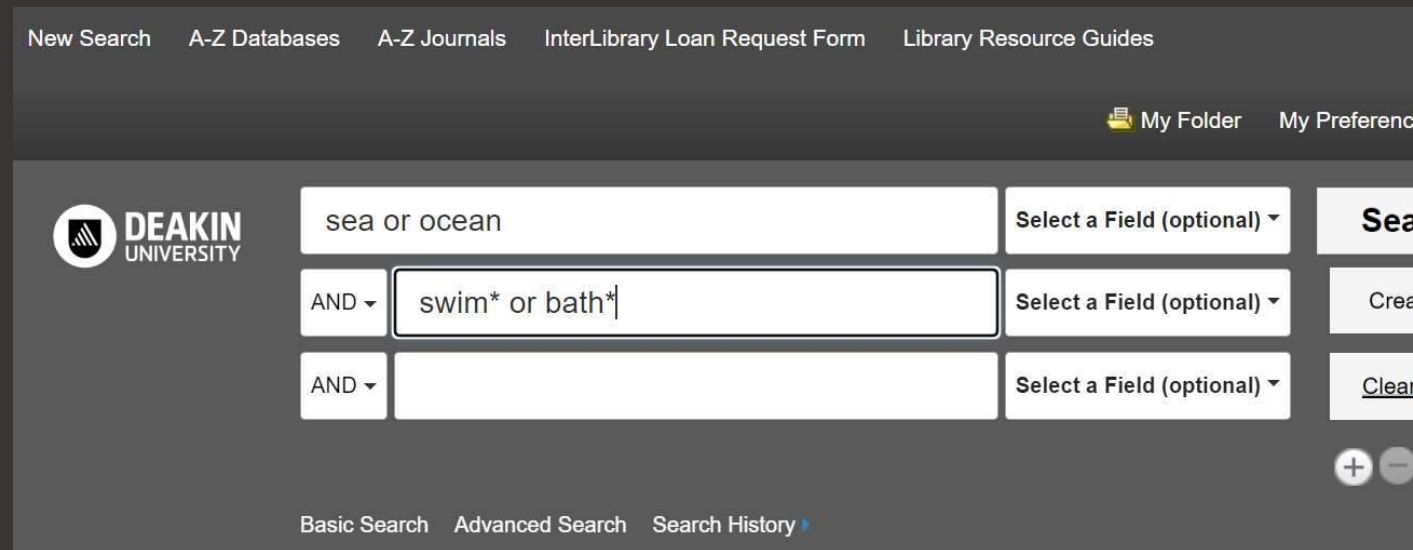
Concept 1: Water body

Sea OR ocean

AND

Concept 2: Swimming

Swim* OR bath*



The screenshot shows the Deakin University search interface. At the top, there are navigation links: New Search, A-Z Databases, A-Z Journals, InterLibrary Loan Request Form, and Library Resource Guides. On the right, there are links for My Folder and My Preferences. The main search area features the Deakin University logo on the left. The search query is entered in three rows: "sea or ocean", "AND swim* or bath*", and "AND". Each row has a "Select a Field (optional)" dropdown menu to the right. At the bottom, there are links for Basic Search, Advanced Search, and Search History.



Activity: Using tech for search terms

(15 minutes)

- Part A: Explore Voyant for text-mining
- Part B: Using ChatGTP for searching

What is Voyant?

- Mines text to identify text patterns and word frequency analysis
- Useful to identify common words and phrases

Other examples of text mining tools

- Word Frequency Analysis - Systematic Review Accelerator
- PubMed Reminer
- TerMine
- Share others you've used on the padlet toolkit

TIP: Consider what you feed text miners – garbage in = garbage out



Text mining using Voyant

What are the benefits of cold water swimming?

- Consider: how do you normally identify your search terms?
- Your task (check the padlet for links):
 - Open Voyant: <https://voyant-tools.org/>
 - Open our seeding article record: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9518606/>
 - Espeland, D., de Weerd, L. & Mercer, J.B. (2022) Health effects of voluntary exposure to cold water – a continuing subject of debate. International Journal of Circumpolar Health, 81(1): 2111789. doi: 10.1080/22423982.2022.2111789.
- Copy and paste the introduction into Voyant (or more of the article if you wish)
- Look at the word cloud – are there any terms or phrases that would be useful as search terms for this topic?
- Play with the functions. Are there any other ways of identifying useful terms?
- Sort the major terms into useful categories for your question



← →



items:

11 context expand



Using AI for synonyms: ChatGTP

What is ChatGTP?

- Generative Artificial Intelligence model created by OpenAI
- Huge amount of media coverage since November 2022

Considerations of ChatGTP

- Currently free but ChatGTP Plus has a subscription plan
- Trains on content you feed it – don't input sensitive information
- Use your common sense and triangulate – ChatGTP can 'hallucinate'

TIP: Cross check information provided by ChatGTP against other sources



ChatGTP: sit back demonstration or play along

- ChatGTP: <https://chat.openai.com/>
- What prompts will give you the best output?
- Generate synonyms for cold water swimming
- Synonyms for swimming
- Write a search for benefits of cold water swimming????
- Generate a google scholar search for benefits of cold water swimming???
- Generate a google scholar search for cold water swimming
- Explore.....
- What's most useful? Would you write a search from scratch? Why/ why not?



What other tools incorporate AI into search functionality?

What are implications for searching?

What are implications for critiquing?

Would you ask Generative AI to write you a search from scratch?

5 minute break?

▶ Reverse engineering using known items





Search tools

- Search engines (eg Google, Duck Duck Go, Google Scholar)
- Library discovery layers
- Databases (eg Informit, Medline/ Pubmed)



Refresher: Searching is iterative

plan A

Plan B



Refresher: Searching is iterative: Tweak your search

Problem	Solution
Search results not relevant	<ul style="list-style-type: none">- Review search records and the terms used, review search terms- Remove any ambiguous terms, replace with more specific terms- Use ideas from a known item to 'seed' your search terms
Too many results	<ul style="list-style-type: none">- Consider any additional concepts to focus your search – add with AND- Consider using phrase searching- Consider whether to exclude terms using NOT (use with caution!)
Not enough results	<ul style="list-style-type: none">- Brainstorm more synonyms for your concepts – add with OR- Consider using truncation or wildcards- Remove any NOT search strings

Refresher?: Common search functions

Search function	What it does	Examples
Truncation	Searches for alternative endings	Swim* = swim, swims, swimmer, swimming
Wildcard: check database help files	Variety of purposes, eg replaces characters	Behavio#r = behaviour, behavior Wom?n = women, woman
Phrase searching	Searches words together in that order	“cold water swimming” “open water swimming”
Proximity searching: check database help files	Searches for terms within a certain number of words of each other	Swim adj3 ocean Swim N3 ocean (finds swim within 3 words of ocean)

Ebsco help for truncation and wildcards:

<https://connect.ebsco.com/s/article/Searching-with-Wildcards-in-EDS-and-EBSCOhost?language=US>



Doff your hat to Google Scholar

What is Google Scholar?

- Provides a way to broadly search for scholarly literature across many disciplines and sources
- Find journal articles, theses, books and abstracts, from academic publishers, professional societies, online repositories, universities and other websites
- Can connect your account to your institution and locate the complete document

Features that set Google Scholar apart from Google:

- Create a Scholar profile
- Save articles to My Library to read later
- Create topic or author alerts
- View your citation metrics and keep track of citations to each article
- The metrics section provides journal quality ranking lists

Tip – If you use EndNote you can set up GS to export your results directly into EndNote.

▶ **ACTIVITY: Doff your hat to Google Scholar** (10 minutes)



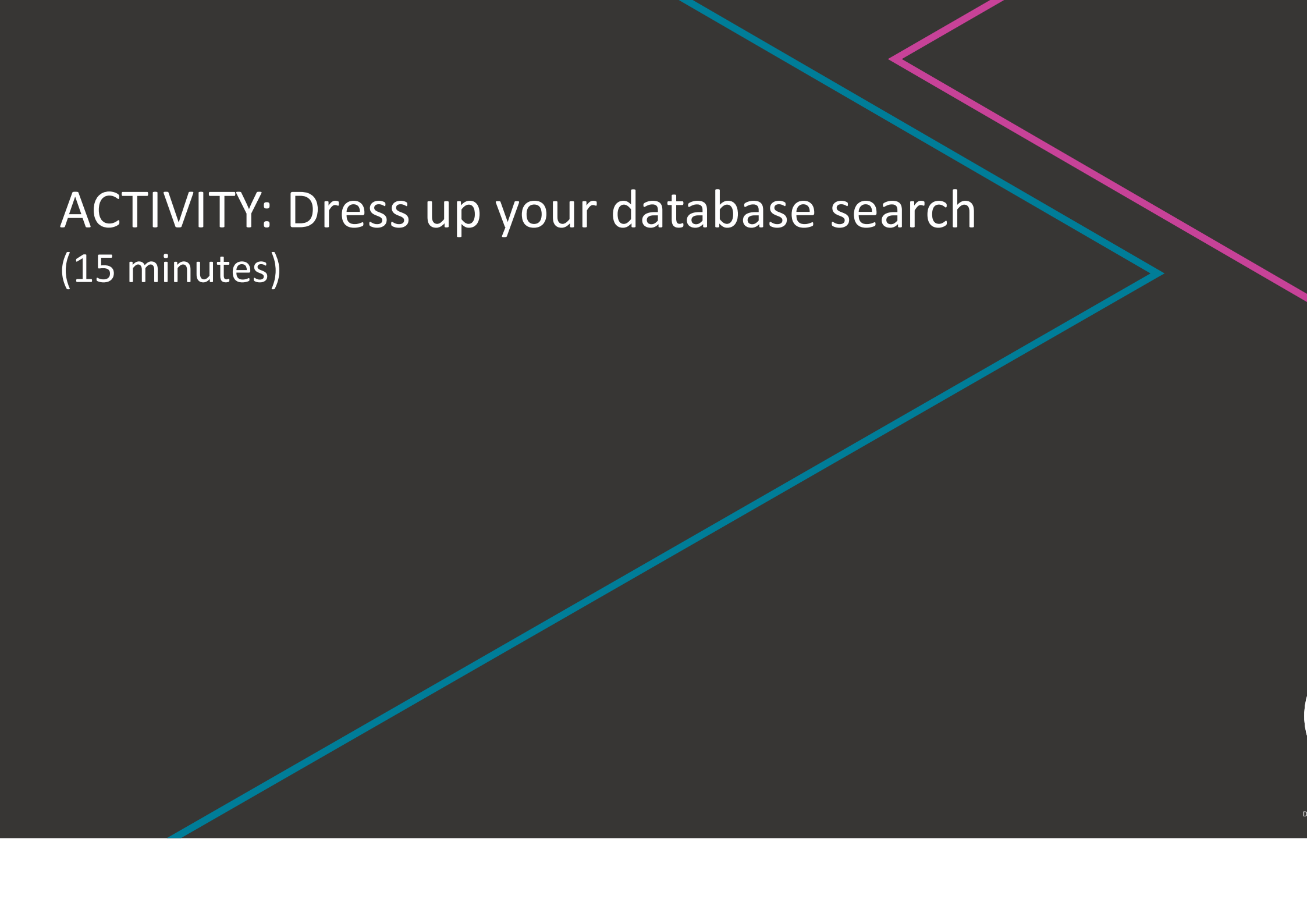
The Task:

Reverse engineer a search in Google Scholar using the Advanced Search function to find a specific article.



End Goal:

Use that article to find more information about that topic by doing a snowball/cited reference search.

The background features several thick, geometric lines. A teal line starts from the bottom left, goes diagonally up to the right, then turns diagonally down to the right, and finally turns diagonally up to the right. A magenta line starts from the top right, goes diagonally down to the left, then turns diagonally up to the left, and finally turns diagonally down to the left.

ACTIVITY: Dress up your database search (15 minutes)



Benefits of advanced database searching

Use metadata to improve your results

- Search for keywords in the title or abstract fields to find results that are focused on your topic.
- Use controlled vocabulary (subject headings) to discover other relevant papers on your topic.

Save your search for another day

- Retrieve, refine and re-run your saved searches for updated results.
- Create auto-alerts to send yourself email updates of your saved search.

Remember to always double-check the searching functions of each database you use!

Demo: Advanced searching in Informit

Advanced Search

ADVANCED SEARCH**CITATION SEARCH****SEARCH HISTORY****SAVED SEARCH**

Searching 8 databases [CHANGE DATABASES](#)

Title

AND

All Fields

SEARCH

Advanced searching in Informit

The screenshot shows the Informit Advanced Search interface. At the top, there are four tabs: **ADVANCED SEARCH** (highlighted with a red underline), **CITATION SEARCH**, **SEARCH HISTORY**, and **SAVED SEARCHES**. Below the tabs, it says "Searching 8 databases" with a **CHANGE DATABASES** button. The main search area contains a search bar with the query: `("mother earth" OR "earth day" OR nature OR "natural world" OR environment*)`. To the right of the search bar are two buttons: **Abstract** and **All Fields**. Below the search bar is a section for search limits, including a dropdown menu set to **AND** and a text input field labeled **Enter Search term**. At the bottom, there is a **Limit Search:** section with three checkboxes: ☒ **Full Text**, ☐ **Open Access**, and ☐ **Peer Reviewed**. Three arrows point to specific parts of the interface: a blue arrow points from the text "Environment* will find variations such as environmental and er..." to the `environment*` part of the search query; a purple arrow points from the text "Use quotation marks to search 'natural world' as a phrase" to the `"natural world"` part of the search query; and an orange arrow points from the text "Informit requires you to put round brackets around your keywords when searching across specific field, such as title or abstract" to the opening round bracket of the search query.

Environment* will find variations such as environmental and er

Informit requires you to put round brackets around your keywords when searching across specific field, such as title or abstract

Use quotation marks to search "natural world" as a phrase

► Comprehensive & systematic searching





Literature reviews

- Overview of the literature landscape
- Identifying gaps for new research
- Systematic reviews and other evidence syntheses
 - Exhaustive searches
 - Policy development



Systematic searches

- Multiple databases (but searched systematically, one at a time)
- Usually uses 'line by line' searching
- Uses a combination of keywords and subject headings
- Aims for a balance of breadth and precision

What are the health benefits of sea swimming for elderly people?

▼ Search History (8)

☐ # ▲ Searches

- ☐ 1 (ocean* or sea*).mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word]
- ☐ 2 "Oceans and Seas"/
- ☐ 3 1 or 2
- ☐ 4 (swim* or bath*).mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word]
- ☐ 5 Swimming/
- ☐ 6 4 or 5
- ☐ 7 3 and 6
- ☐ 8 limit 7 to "aged (80 and over)"

► The future of search is
here



Discussion: Future searching

(5 minutes)

- What impact will AI have on searching?
 - How reliable do you think it is/ it will be?
 - What biases do we need to be aware of?



Future searching: possibilities

- Generative AI/ large language models in search engines
- Bing and ChatGTP and Google and Bard
 - 'more secure and accurate'? Time will tell.
 - Synthesised answers rather than going direct to websites
- Use of AI in tools
 - Yewno in Discovery Layers
- Use of programming languages to run automated searches
 - Python packages
 - Litstudy: A Python package for literature reviews
- Automation in selecting material
 - Natural language processing used in Covidence (a screening tool)
- Critical appraisal education
 - Mis and disinformation, deep fakes, generative AI hallucination
 - Overview < Detect DeepFakes: How to counteract misinformation created by AI — MIT Media Lab



Future searching: training

Comprehensive searching

- EdX course: The Art and Science of Searching in Systematic Reviews (free – 5 weeks)
- Health Libraries Australia Professional Development (eg. Search design for systematic searching; automation in systematic reviews)

Digital Literacy

- Spotting Misinformation Online
- Understanding the Impact of Deepfake Videos
- Individual database training videos

► Wrap up & questions

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Wrap up: today we:

- Sharpened your search skills and build a practical toolkit
- <https://padlet.com/FionaRussellB/search-like-a-ninja-1h2y9e4humc306i0>
- Explored different types of searches
- Used emerging technologies to identify high impact search terms
 - Text mining (Voyant), AI (ChatGTP) to identify terms and generate synonyms
- Explored different searching tools & functions
 - Google, Google Scholar, Database: Informit
- Reverse engineered a topic search
- Considered the future of search

► Any last questions?

