

How to do a systematic search for information

Before you can do a proper search, you need orientation on your subject, e.g. use wikipedia or textbooks or review article(s) or ask an expert

1 Formulate your question clearly (who, what, where, why, which, how?)

Example: Which methods are used in the Netherlands to handle radio active waste?

2 Split your question in independent aspects. Determine the relations between the aspects (AND, OR, NOT) and determine the basic aspects that you want certainly in your hits.

Example: 'radio active', 'waste', 'the Netherlands' must occur in the hits. Relations: AND

Don't search for aspects like 'methods', 'used', 'handle': this will reduce the number of good results!

3 Choose the suitable database(s)

Frequently used is [Scopus](#). For more possibilities see Web site of the University Library www.utwente.nl/ub, click 'Search', 'By Discipline', your faculty/ your discipline.

4 Find search terms (as many as possible) for the aspects. Do this for one aspect at a time. Use if necessary dictionaries, handbooks, encyclopedias, experts. Pay attention to

- synonyms (e.g. nuclear/radioactive/radio active, waste/residue)
- singular/plural forms, verbal forms, adjectives (if possible use truncation e.g. waste*)
- string searching with “ “ (e.g. “radio active”)
- english/american (e.g. colour, color)
- broader/narrower terms (e.g. nuclear/uranium, plutonium)
- classification terms (e.g. international patent codes)

Example: radio active → “radio activ*” OR radioactiv* OR nuclear
waste → waste* OR residue*
the Netherlands → netherland* OR dutch

5 Perform the search, use AND, OR, NOT, (), NEAR

Example: (“radio active*” OR radioactive* OR nuclear) AND (waste* OR residue*) AND (netherland* OR dutch)

6 Have a good look at the results.

Do you see terms that are a useful addition to your search terms? If yes, use them and **search again**.

6A If you get too few good hits, then search again with

- more or better search terms e.g. that you found in your hits or ask an expert
- less demands: drop aspect(s), less AND
- more languages (matching with the database(s))
- more publication years (older) or more databases/search engines
- search in more fields (e.g. 'abstract' in stead of 'title') or search full text (e.g. in the databases Science Direct, SpringerLink, Wiley Interscience, Oxford Journals or GoogleScholar)

6B If you get too many (good) hits, then make more demands, such as

- use more search aspects with AND
- ask for only young results (hoping the older ones are included)
- important words must occur in the title instead of the abstract/full text
- search for 'review articles' (= survey of literature) or most cited hits or books with outstanding reviews

6C If you get too much 'noise', bad hits, then search again with adjustments, such as

- replace short truncated words by full search terms, e.g. car* → (car OR cars) to avoid 'careful' etc.
- if search terms occur too far from each other (no relation), use NEAR or “phrase searching”
- homonyms: exclude unwanted meanings: e.g. jaguar NOT (car OR cars), if you want the animal
- Refine if possible with Subject Area's or Source Titles (e.g. Scopus) or classification terms (e.g. patent searching)