How to Research
The elements of Research

1. Planning
2. Sources of information
3. Search tools
4. Search Skills
5. Evaluation
Give yourself plenty of time – be patient

- Read your assignment question carefully. Know what you are being asked.

- What are the keywords and concepts that describe the information you require.

- How long is your assignment meant to be? How many words and in what format are you being asked to present? When is it due?
What kind of information do you need?

There are many, varied sources of information and part of the planning process is to determine what kind of information you require and the best sources.

For example:

- General Information about a topic – Books, DVDs, Video programmes, Internet search - Google Scholar. General information databases e.g. ANZ-RC
- Current information – Newspapers, eJournals - Databases
- Government Policy – Websites
- Statistics – Online e.g. ABS (Australian Bureau of Statistics)
- In-depth research articles – Subject specific databases & eJournals
Sources of Information
What are Sources of Information?

- Places where pertinent information is gathered.
- Print sources e.g. books, print journals
- Visual/Listening/Video sources e.g. streaming videos, DVDs, TV programs, Movies, Podcasts
- Internet sources e.g. websites, documents on websites, blogs, databases.
Sources to be wary of

Blogs
Websites – especially any webpage that seems to be pushing a particular point of view, personal opinion & unsubstantiated commentary.
Search tools
or where do I go to find information
Catalogues – all Libraries have catalogues to guide Library users to the holdings in the Library. TAFECat is the catalogue of all TAFE Libraries in NSW. Most catalogues are searchable online. Different catalogues have different but similar search interfaces.

Databases – are subject specific collections of articles from journals, conference proceedings, theses and the like. Each database has a different but similar search interface. Databases are referenced and peer reviewed. Are subscription i.e. paid for and usually require a user name and password to access.

Internet – the world wide web searched via a search engine interface. Google is the most commonly used search engine interface. Internet searches can be unwieldy and provide unverified results. Use Google Scholar for academic results.
Search Skills
or how to effectively & efficiently search for information
Keywords are words used to describe the information used in your research.

Develop broader and narrower terms. E.g. words that have a broader meaning e.g. marsupial rather than koala; amphibian rather than frog as well as specific descriptors for the information sought e.g. the scientific name of your husbandry manual animals, food and nutrition etc.

Think of words with a similar meaning (synonyms) to your keywords. For example, dog/canine,

Keywords will become your search terms once you begin your information search.
Truncation

- Is a search technique where the ending of a word is replaced with a symbol allowing for one search for different forms of the same word e.g. plurals
- Truncation symbols may change depending on the search interface being used.

Example:
- the truncation symbol for TAFECat = $;
- the truncation symbol for most databases = *.

Example of truncation for TAFECat:
- Austral$ = Australia, Australian, Australia$s,
- Marsupia$l$ = Marsupia$ and Marsupia$ls
Boolean Searching

- Is a search technique where search words/keywords are used in conjunction with “Boolean Operators” to join them in such a way as to narrow or broaden the search. In most cases the “Advanced Search” option on the search interface will provide the Boolean option.

- Boolean operators are – “and, or, not”
Search Tips

- Don’t type your whole assignment question into the search bar. Build a list of relevant keywords and use them.
- Use other search skills and refinements as provided by the search interface e.g. Boolean operators.
- Most search engines & search interfaces ignore the words “the”, “an”, “a”, “for”, “in” – you don’t need to include them when searching.
- Where possible select “full text” & peer reviewed before finalising the search.
- Be aware that some search results may be citation only.
- For current information select a date range.
How to begin

1. USING CATALOGUES
2. USING THE ANIMAL SCIENCE INDEX (IN-HOUSE)
3. USING GOOGLE SCHOLAR
4. USING DATABASES
Using Catalogues

Many catalogues are freely available online. Libraries are free to access.
Using library catalogues

- Start with TAFECat.
- Use keywords – remember that keywords that are too specific in a catalogue will not provide good results. Use broader rather narrower terms.
- Use truncation where relevant and consider using the Advanced Search option to engage Boolean searching.
Using keywords in TAFECat

- A keyword search in a catalogue will look for all the words typed in the search bar as individual words. This can result in a large number of “hits”
- Consider reducing the number of keywords used in your search, moving to another type of search
- For example the Quick Search in TAFECat has different searching options:
Or use the Advanced Search options in TAFECat which uses Boolean Searching

https://tafecat.tafensw.edu.au/tafecat.html
Using the Animal Science In-House Index
To locate articles in print journals in Richmond Library use the Animal Science Index. Richmond has an extensive print journal collection that is indexed by the Librarians.

Use the PDF on the Captive Animal Libguide or use the print copy in the Library.

List of indexed journals

- Australian Birdkeeper
- Australian Birdlife
- Australian Geographic
- Australian Zoologist
- Cumberland Bird Observers Club Newsletter
- Frog Call
- Hawkesbury Herpetologist
- International Zoo Yearbook
Using Google Scholar
Google Scholar

- Use Google Scholar to access referenced and peer reviewed information.
- Google Scholar can be set to link to full text articles available through the EBSCO subscription database.
- Use the Quick Links on the Library Homepage to access Google Scholar.
Linking Google Scholar to TAFE Library EBSCO database

At the Google Scholar homepage go to the Menu – Settings – Library links – type in TAFE NSW and search. Select TAFE NSW and tick the box on the LHS. To return to the Scholar homepage click on the Google Scholar graphic.
Google Scholar Advanced Search

- Select the menu again and choose Advanced Search
- At the search interface use the Boolean options to develop a specific search. (Note Google does not use truncation but uses automatic stemming i.e. the word and its' derivatives as long as the entire word is entered)
- Use the keywords you have developed to search Google Scholar.
For example
The results

Non-invasive evaluation of physiological stress in an iconic Australian marsupial: the Koala (Phascolarctos cinereus)

Ed Narayan, K Webster, V Nicolson, A Mucci ... General and ... 2013 - Elsevier

... Therefore, stress monitoring should be a key component of captive breeding programs at Zoos ... pouched young [n = 6], non-lactating female [n = 7] and adult male) were used for this study from the Dreamworld Koala Country houses ... Koalas were kept in an indoor viewing area ...

Birth of Koalas Phascolarctos cinereus at Lone Pine Koala Sanctuary following artificial insemination

SD Johnston, MR McGowan ... - International Zoo ... 2003 - Wiley Online Library

... Although these techniques are increasingly being used in the captive-breeding of otherian wildlife (Wildt et al ... Koala F51 urinated during the insemination procedure, potentially contaminating the inseminate and ... The results of Trial 1 show that A1 in Koalas using interrupted ...

Semen characteristics in free-living koalas (Phascolarctos cinereus)

DE Wildt, M Bush, SJ O'Brien, ND Murray ... - ... 1991 - rsp.bioscientifica.com

... to understanding the effects of genetics and disease on fertility, establishing captive breeding colonies or ... is being used in parallel studies to evaluate genetic variability among koala populations using ... Forty-eight adult, male koalas were evaluated in February from 3 Victorian ...

Heterosexual and homosexual behaviour and vocalisations in captive female koalas (Phascolarctos cinereus)

S Feige, K Nilsson, CJ Phillips ... - Applied Animal Behaviour ... 2007 - Elsevier

... The study was conducted at the Lone Pine Koala Sanctuary in Brisbane, which ... All koalas used in the study were sexually mature and clinically healthy for the ... the study (October 2001-December 2002), which was conducted within the acknowledged captive breeding season of ...

Maternal effort and joey growth in koalas (Phascolarctos cinereus)

JR Tobey, CH Andrus, L Doyle ... - Journal of ... 2006 - Wiley Online Library

... Our goal was to scrutinize koala growth and development in the context of maternal life-hist... strategies. We analysed nearly 26 years of longitudinal data from a captive-breeding population of koalas to examine how joey growth and survival are related to maternal condition ...

Screening semen from koalas (Phascolarctos cinereus) for Chlamydia species by PCR

TJ Bodetti, C Knox, P Timms, S Johnston ... - Veterinary ... 2002 - veterinaryrecord.bmj.com

... can also be used to introduce genas from wild koala populations into captive-breeding programmes to reduce ... Before koala semen can be used for AI, it is essential to screen the ejaculate.
So to do the search in the live environment so that I can demonstrate the links after the results in Scholar I will go live to Scholar and repeat the search

https://scholar.google.com.au/#d=gs_asd
How to get copies of articles not available through the Google search

- Check the TAFE NSW Libraries databases – use the Journals search to check the journal. Use the eJournals tab and the Journal Title Finder
- Still not available? Note the citation information and ask one of the Library staff to assist with locating a free copy of the article. Pay for a copy from the vendor.
Using databases

DATABASES ARE COLLECTIONS OF INFORMATION TO WHICH LIBRARIES SUBSCRIBE. THEY MAY BE MORE SPECIFIC THAN AN INTERNET SEARCH.
TAFE NSW Library Databases

- Have to be searched individually.
- Have journal articles full text, newspaper articles and conference.
- Have different coverage with some potential overlap of journal articles.
- Databases relevant to Captive Animal research are linked to the Captive Animal Libguide.
- [https://wsi.tafensw.libguides.com/capanimals](https://wsi.tafensw.libguides.com/capanimals)
- Use the Keywords that you have developed – the specific ones are the better when using databases.
How to get copies of articles from journals
Evaluation
Evaluating Sources

Gathering information from reputable sources makes evaluation much easier.

Gathering information randomly from the Internet demands information be critically assessed.

You can use the CRAAP test in the Libguide Assignment Essentials Tab.
Reading URLs
(Uniform Resource Locator)

URLs can be very informative. URLs have an “Anatomy” each part provides an indication of what the website is about, learning to read url’s lessens the impact of opening and closing irrelevant webpages and allows for more specific internet searching:

http or https – hypertext transfer protocol & hypertext transfer protocol secure are the language of the type of information being transferred

It is followed by ://

Then the Domain name which is the unique reference that identifies the Host/website e.g. https://wsitafensw.edu.au the Domain name is wsitafensw and is followed by the Top level domain name .edu or .gov etc. The top level domain name describes the type of website and may be followed by a geographic descriptor e.g. .au (Australia) .ca (Canada) etc.

NB:
Domains are separated dots.
Anything after the // is known as the resource name.