Using the Library for your Final Year Project

Laura Woods, Computing & Engineering Librarian

library@hud.ac.uk

Today's lecture is a Choose Your Own Adventure!

What would you most like to cover? We can do any two of these:

(go to Menti.com to vote…)

1. How to plan and structure your background research / literature review.
2. Advanced searching tips and techniques.
3. Specialist resources for your research.
4. How to evaluate information and sources.
5. Referencing your work in APA 6th.

What is a literature review?

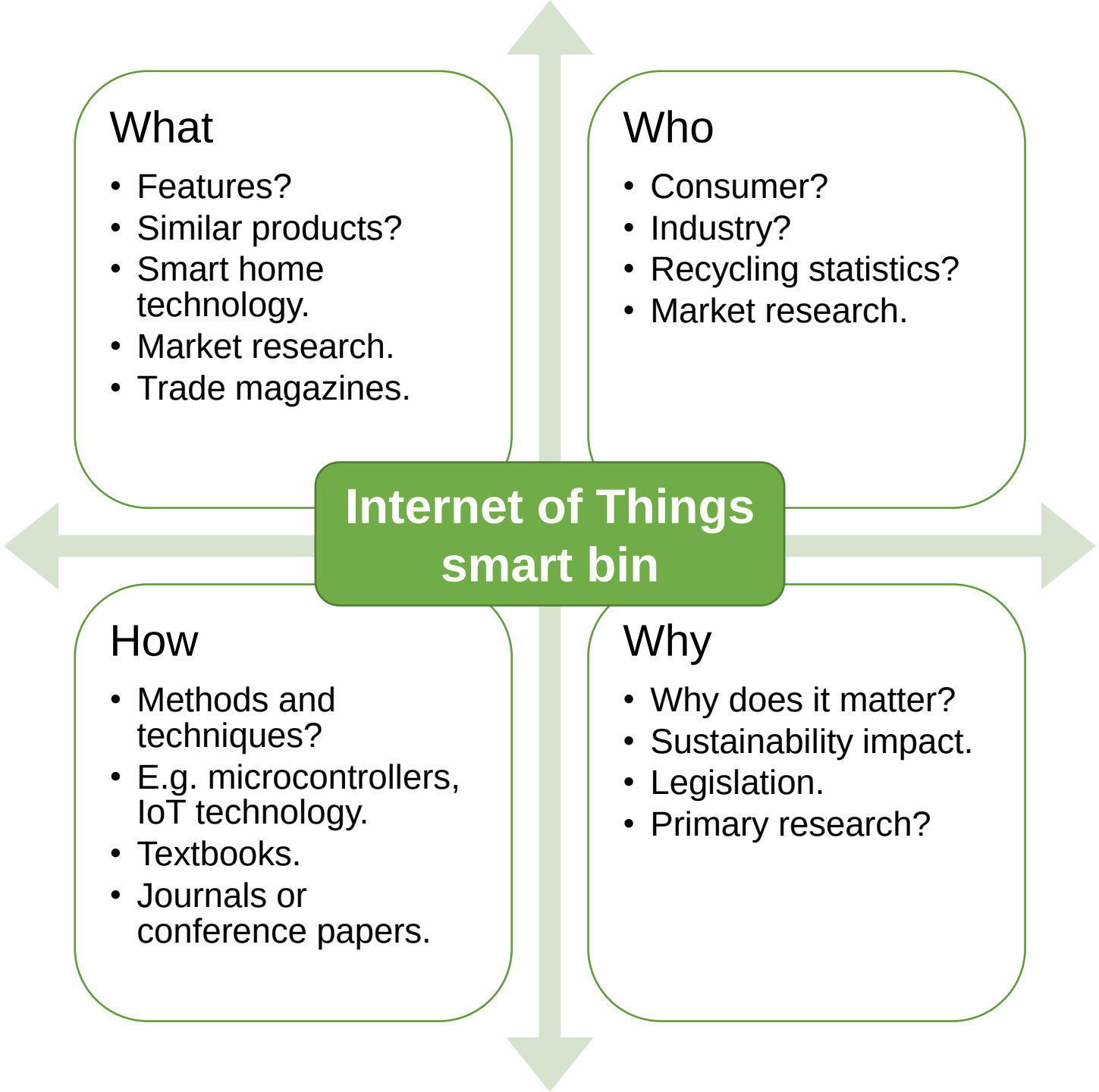
How to plan and structure your background research.

A good literature review / background research section…

- Explains why your project is unique and necessary.
- Justifies decisions you have made (e.g. about features to include/exclude, techniques to use).
- Includes quality sources that you have thought about critically.
- Is well structured: take the reader through a theme at a time.
- Makes your project stronger!

What do you need to find out?

What?	• What is your project? • Is there anything else like it out there?
Who?	• Who is it for? • E.g. businesses, individuals, demographics
How?	• What techniques/methods will you use? • Why are they the best techniques/methods?
Why?	• What problem are you trying to solve? • Justify any decisions you make!


Internet of Things smart bin
What
• Features?
• Similar products?
• Smart home technology.
• Market research.
• Trade magazines.
Who
• Consumer?
• Industry?
• Recycling statistics?
• Market research.
How
• Methods and techniques?
• E.g. microcontrollers, IoT technology.
• Textbooks.
• Journals or conference papers.
Why
• Why does it matter?
• Sustainability impact.
• Legislation.
• Primary research?

Your turn!

2 minutes free-writing.

What questions do you need to ask?

Try using the what / who / how / why framework.

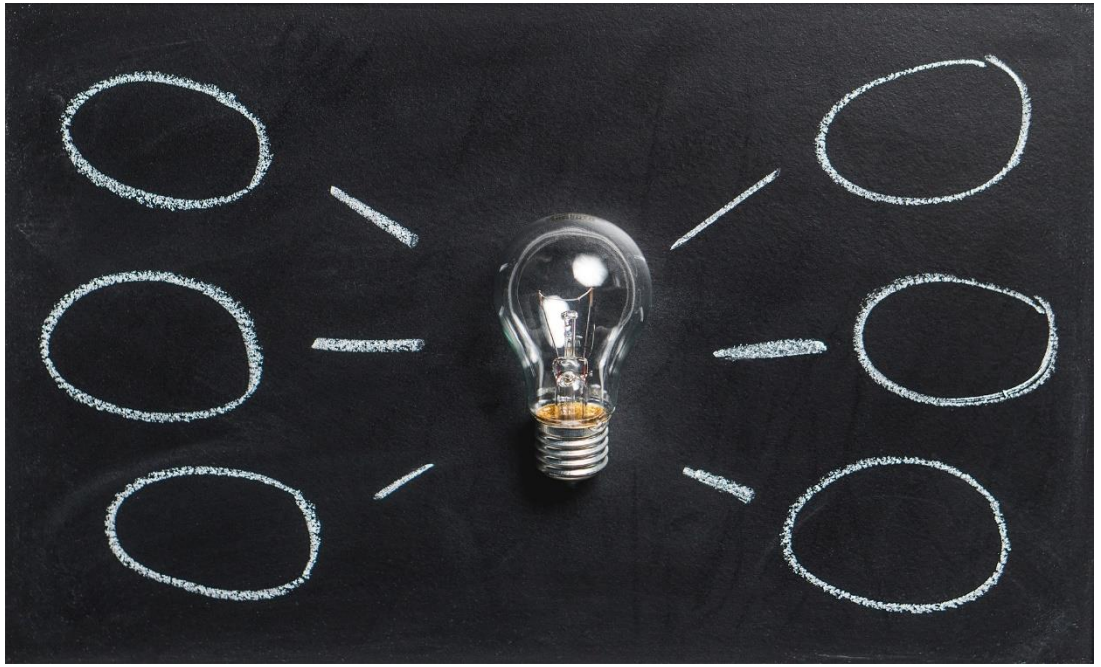


Image by TeroVesalainen from Pixabay.

Structuring your literature review

Use sub-sections, discuss each element of your research using references to back up your argument.

For example…

- **Review of current smart home technology** *(what).*
- **Levels of recycling among [consumers] / [industry]** *(who/why).*
- **Comparison of microcontroller features** *(how).*

Keep notes as you go

Source title	Reference	Your comments	Useful quotes (with page numbers!!)

Keep copies of anything useful

Screenshot/print useful websites – they may change!

Consider using a tool like RefWorks to organise your research

Advanced searching

Tips and tricks for Summon and other databases

Using keywords and synonyms

How could an Internet of Things smart bin improve household recycling rates?

Using keywords and synonyms

- Internet of Things
  - IoT
  - Microcontroller
  - ?
- Smart bin
  - Home automation
  - Smart home
  - ?
- Household recycling
  - Sustainability
  - Waste
  - Green lifestyle
  - ?

Exercise: mind-map your own keywords

On paper or on your phone/tablet/laptop, write down:

1. What are the key concepts you need to research? (e.g. time management, apps, students).
2. How many **synonyms** can you think of? (These are words that mean the same thing, e.g. time management and productivity).
3. How many **related terms** can you think of? (These are words that don't mean the same, but are related to the same concept. E.g. time management and procrastination).

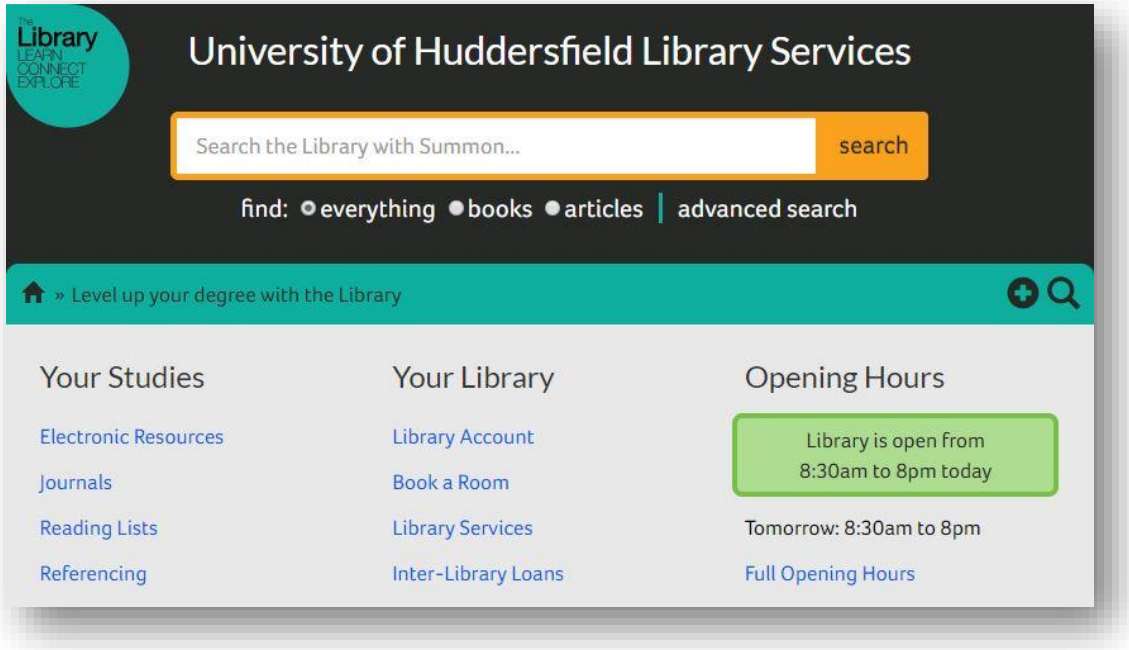
Summon, the library's search engine

Find everything the library has, in print or online.

Search by keyword, title or author.

Supports advanced searching.

For help, see our video guides to Summon.



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What sources should you use?

Specialist sources for your research

What types of information do you need?

Previous research	Latest developments	Case studies	Facts & figures
Statistics	Legislation and regulations	Industry analysis	Theory and principles

Where would you find these?

Previous research
- Books
- Literature reviews

Latest developments
- Journal articles
- Industry websites
- Newspapers
- Conference papers

Case studies
- Industry websites
- Books
- Journals
- Trade magazines

Facts & figures
- Books
- Journal articles
- Industry websites

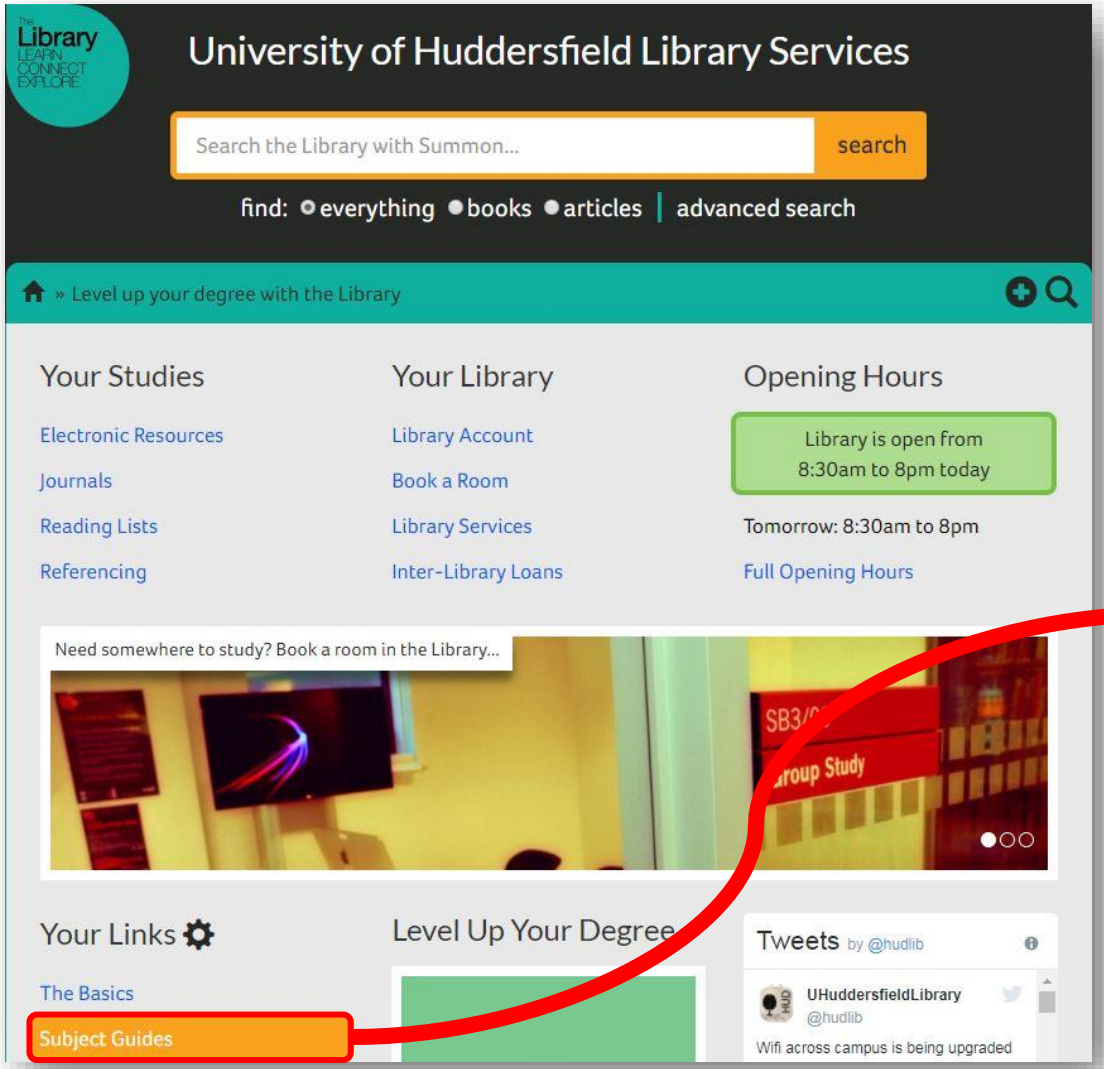
Statistics
- Industry websites
- Government websites
- Market research

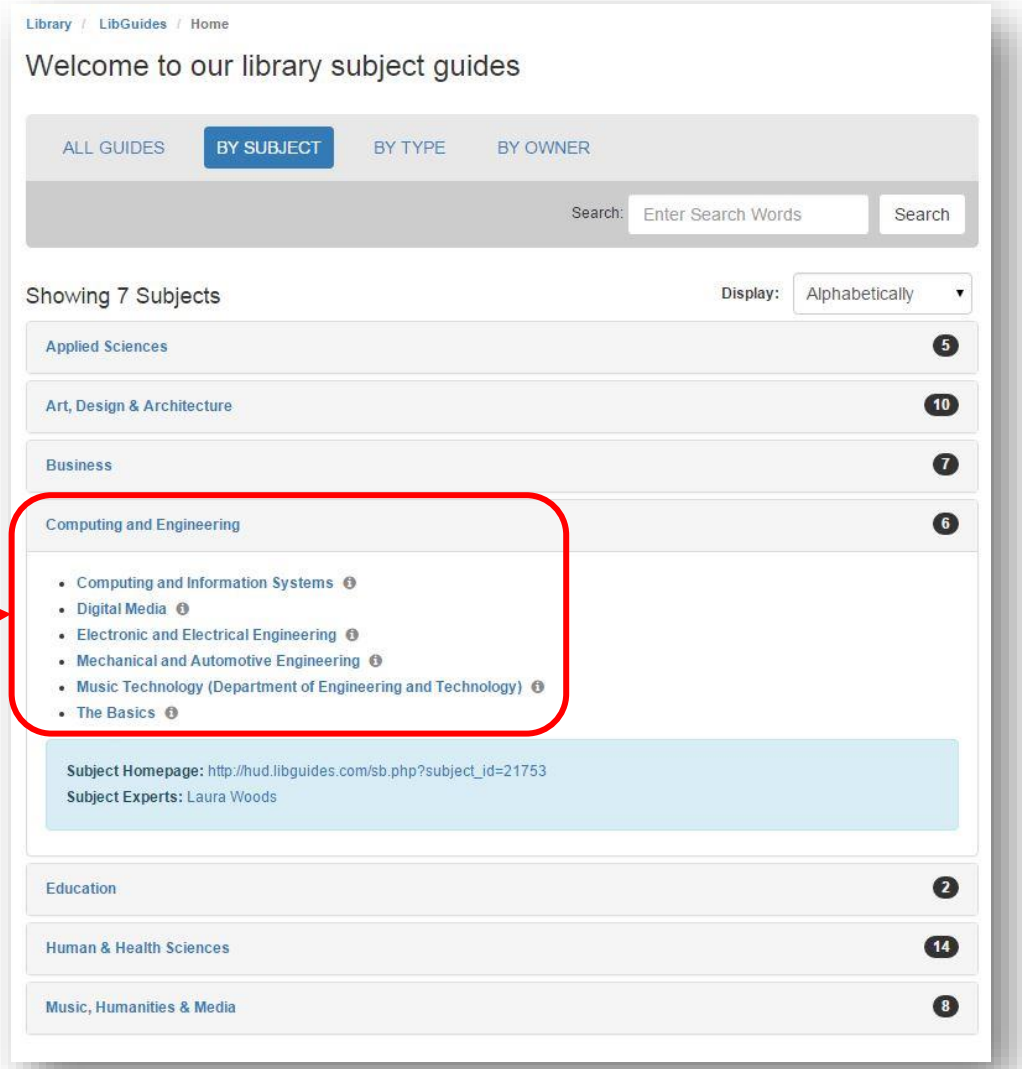
Legislation and regulations
- Government websites
- Industry regulations

Industry analysis
- Trade magazines
- Blogs
- Industry websites

Theory and principles
- Books

Find your library subject guide





Key databases for Engineering

- **IEEE Xplore**
  One of the largest publishers of scientific and technical research. Covers a wide range of topics from the Engineering and Computer Science disciplines.
- **SAE Digital Library**
  Technical papers and ebooks from the Society of Automotive Engineers.
- **Knovel**
  Ebooks, conference papers, and technical reference tools across all Engineering subjects.
- **British Standards Online (BSOL)**
  Full access to all British Standards, as well as European and International standards adopted by the UK.

Evaluating your sources

Can you tell a quality source from a bad one?

Which of these claims do you trust the most?

- Google Home helps you keep organised.
- Apple HomePod is the best new smart speaker.
- Many people don't know their smart speakers are recording them.
- Amazon workers listen to your conversations with Alexa.
- Usefulness is more important than privacy to buyers of smart speakers.

Go to Menti.com to rank these…

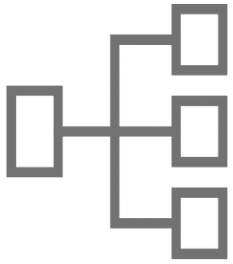
Checking your sources in four moves…

Stop

- Ask yourself: does this make sense? Are these claims likely?
- Remind yourself what you are trying to find out.

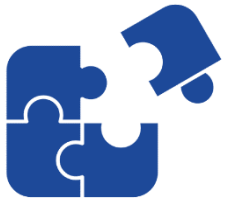
Investigate the source

- Who wrote/published this information?
- What was their purpose?
- What are their credentials?



Find other coverage

- Do other sources make the same claims?
- Is there disagreement? Try to read “both sides” if possible



Trace the original claim

- E.g. if a news source claims “Research says…” can you find that original research?
- Is there context that has been lost along the way?

Caulfield, M. (2019). *SIFT (The Four Moves)*. https://hapgood.us/2019/06/19/sift-the-four-moves/

Referencing like a pro

All the secrets of APA 6th, revealed!

Do I have to reference this?

- ✅ Information I found on a website?
- ✅ Something I was told in a lecture?
- ❌ Common knowledge (e.g. water boils at 100°c)?
- ✅ A direct quote from a book?
- ✅ A summary of an article in my own words?
- ✅ A photo copied from Google Images?
- ❌ My own, original ideas?

In-Text Citations

Here is my argument for this assignment, as backed up by this quote from an expert: “In my expert opinion, referencing is awesome” (Smith, 2015, p.23). Furthermore, Jones, Gibbons and Li (2003) argue convincingly that referencing is the best thing ever.

Reference list

Jones, K., Gibbons, G. & Li, Y. (2003). How we learned to love referencing. *Journal of Awesome Referencing*, 33(5), 15-18, doi:10.1111/SD-12-2000-0000

Smith, A. (2015). *Keep calm and carry on referencing.* Huddersfield: University Press.

What goes in a reference?

Who?	• Author • Organisation
When?	• Always include the year • n.d. (“no date”) if date unknown
What?	• Title of book, article etc • For websites, title of the page not the site
Where?	• Books: publisher & location • Journals: journal title, page references, DOI

What do references look like?

Who

When

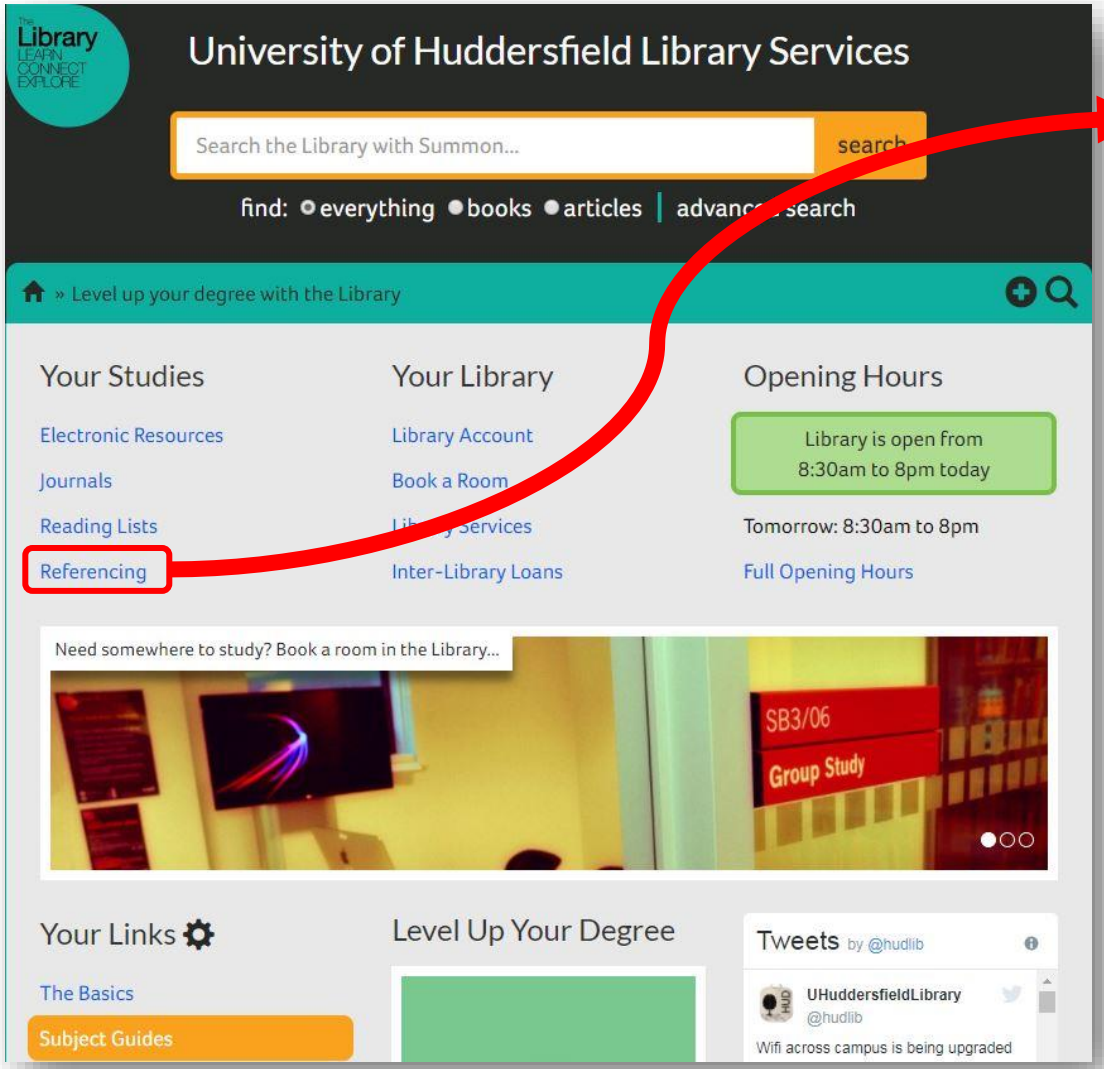
Jones, K., Gibbons, G. & Li, Y.(2003). How we learned to love referencing. *Journal of Awesome Referencing*, 33(5), 15-18, doi:10.1111/SD-12-2000-0000

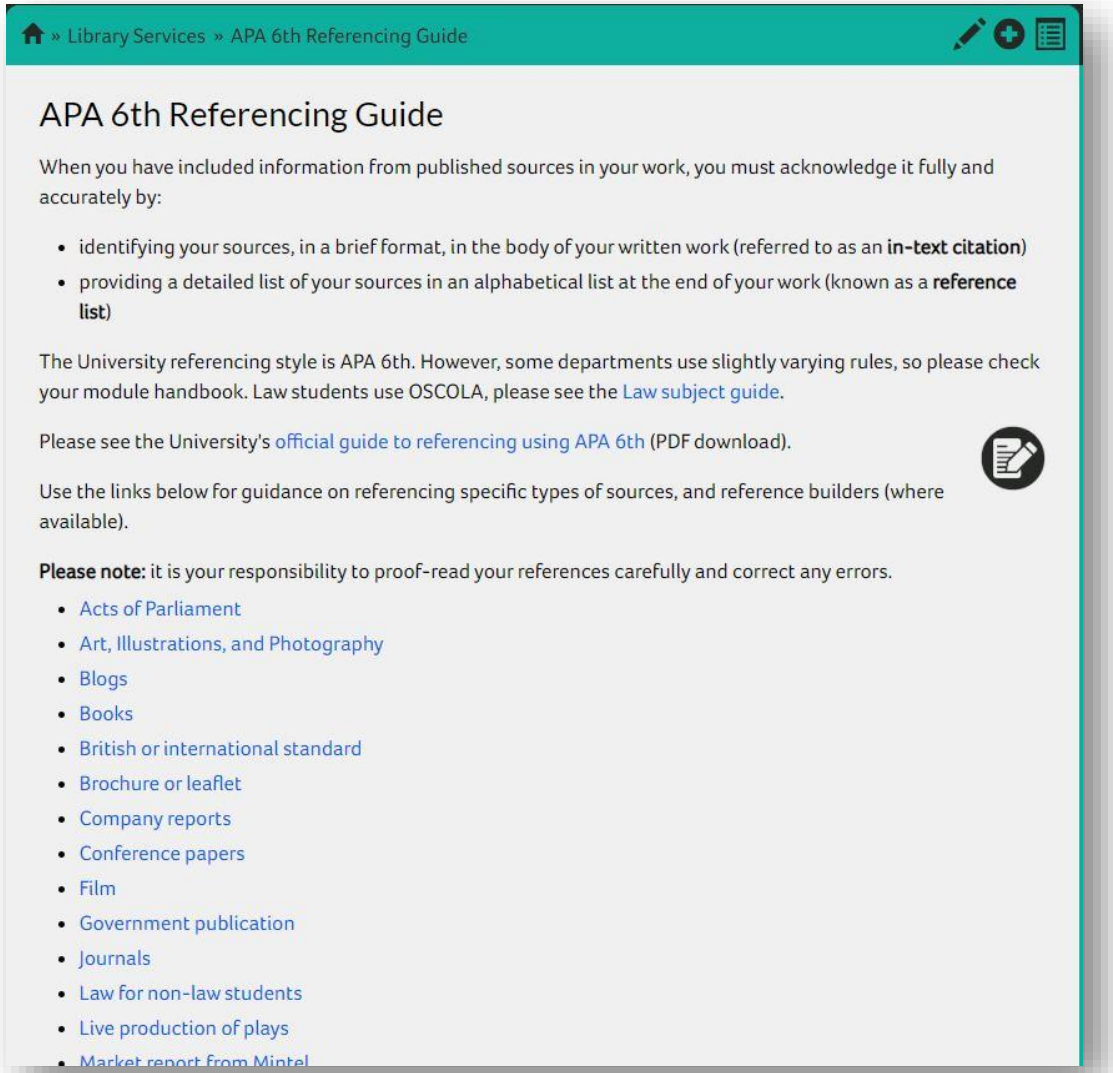
What

Smith, A. (2015). *Keep calm and carry on referencing*. Huddersfield: University Press.

Where

Find the referencing guide





Frequently asked questions…

How do I reference an image?

Reference the source it came from. E.g. if you took it from a website, reference the website. Include the in-text citation (e.g. Sound on Sound, 2019) in the image caption.

Can I just use the built-in referencing tool in Word?

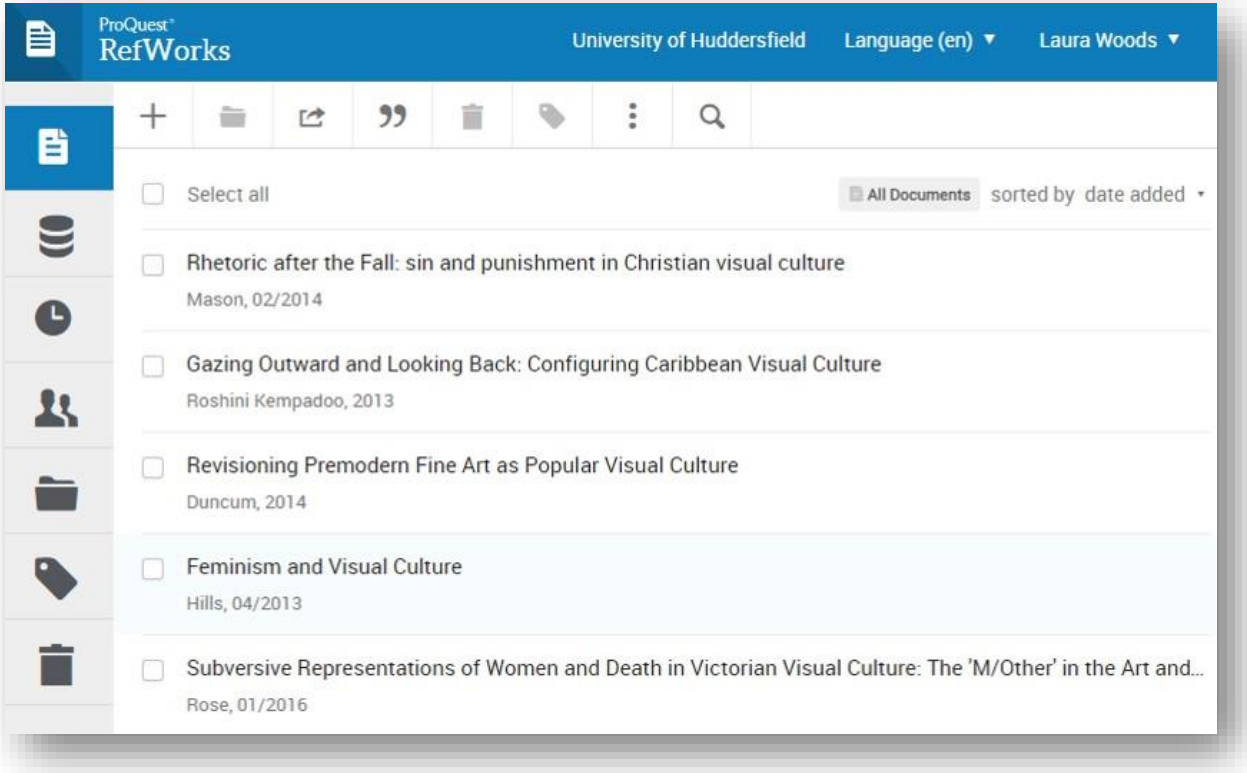
If you like, but be careful: I have found errors in it before.

How many references do I need?

There is no answer to this! It will entirely depend on your own research topic and how much you are able to find.

Save and cite your items in RefWorks

- Online folder where you can save all your references.
- Save results directly from Summon.
- Generate references automatically in Word.
- Store and annotate PDFs.
- Video guides available: hud.ac/refworks



More info on referencing…

YouTube videos:

- What is referencing?
- How to reference in APA 6th.
- Tools to help you reference.

Online referencing guide: library.hud.ac.uk/apa