



# Online Search Strategy

**The ability to conduct effective online searches and critically evaluate sources are important research skills for students. This article contains essential tips for students and teachers.**

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## Introduction

An online search strategy should be considered as part of a greater research process. There are many ways to approach the research process, but a common method is one outlined by the 'Big6' model:

- 1 Task Definition
- 2 Information Seeking Strategies
- 3 Location and Access
- 4 Use of Information
- 5 Synthesis
- 6 Evaluation.<sup>1</sup>

This article will focus on the first three of these steps and how they might relate to an online search strategy.

## Task Definition

First, students need to define the topic being researched. For many of them, not having enough background information can be a barrier to researching it. A good place for students to start might be by looking at the introduction of a Wikipedia (<https://www.wikipedia.org>) or Simple Wikipedia (<https://simple.wikipedia.org>) article about the topic.

For students to come up with strong keywords to include in an online search, they often need to broaden

their vocabulary. It can therefore be worthwhile to perform a synonym search (e.g. search for 'synonyms of [...]'). It is also useful for students to know the different ways a phrase or event can be worded so alternative searches can be carried out. For example, a search for the 'Battle of Hastings' and the 'Norman Conquest' return quite different results in a Google search.

A Google image search (<https://images.google.com/>) can be useful for exploring an historical event or artefact. A picture of the event may be more enlightening than a written definition.

Students need to work out what kind of information constitutes successful research into their topic and what type of evidence might solve the question they are researching. It is important to spend time teaching the concept of evidence. Ask students to brainstorm the different types of evidence that might be examined as part of their research (i.e. facts, examples, definitions, quotes, artefacts, images, data and statistics). Posing questions like 'What kind of evidence would provide an answer to your query?' can help students to start thinking through the lens of evidence when researching.

For example, a student investigating the pathway to Australian Federation might decide, after some background reading, that primary source material from

the records of Federation conventions and public speeches on the topic of Federation would provide useful information. Subsequent searches could then be narrowed to records from the conventions and transcripts of public speeches, and perhaps newspaper articles quoting from them.

### Information Seeking Strategies

Good searches start off broad and get narrower as more is learnt about the topic from doing the search. This is especially useful in history research because having knowledge of the historical context helps direct further research. For example, a student might undertake an online search about the war on the Eastern Front in World War II before finding out more about the siege of Stalingrad and the specific reasons for that battle.

The stepping stone method is also a good information seeking strategy. Starting with a search on a specific term, researchers can use information they gain from reading around their original search results to inform the rest of their search. They can then repeat this process to arrive at a final destination, or to head down a different path based on new information they've learnt during their search process. This is an important concept to convey to students; because the research process itself is not linear, what you learn while researching will change your thinking about the direction of the research. For example, a student researching the importance of the Great Wall of China might initially conclude that its most significant function was to keep invaders out. Only after researching more might they discover that it also later served as a psychological barrier between Chinese civilisation and the world. If students do not learn during the research process and change their research based on what they learn, they won't benefit from knowledge they didn't have at the start of the exercise.

Another effective strategy is to try and imagine how the information the researcher is looking for would be presented. For example, will it be in the form of a persuasive narrative essay, a data table or a primary source? Consider the analogy to problem-solving in mathematics. When trying to solve a problem, it is a good idea to estimate what the answer might be before calculating it. That way, you can decide

if the answer you arrive at is about right or not. This helps to avoid a common problem where a wrong answer (which may be wrong by a large factor) is not picked up due to a lack of attention to detail. Similarly in history, if a student thinks the information they're looking for should be an ancient document, when the results come up with a modern cartoon, they know they've gone down the wrong path.

Finally, good researchers know when to stop their current search and switch to a different strategy. If, while using the stepping stones method, a student ends up getting results that are quite different to those expected, they need to change course.

### Location and Access

A difficult thing about searching for information online is the enormous amount of it, and students need the skills to hone in on the correct type of information. There are lots of different types of websites on the internet; however, many of them are not particularly useful for research. Those of most use include scholarly works, databases, archives, reference sources and information pages. If a student is investigating feudal Japan, for example, images from the Tokyo National Museum (see <http://www.tnm.jp/?lang=en>) would be a credible reference source, whereas a site like 'Facts About Japan' (see <http://www.facts-about-japan.com/feudal-japan.html>) would be an information page. Information pages may not be as reliable or trustworthy as other sources, but they are the ones most commonly used by school-age students. For lower-level research, information pages are acceptable, but to become a better researcher, students need to start accessing more reputable sources.

### SEARCH TERMS

Students should develop a list of keywords associated with their topic and refine them throughout the research process. They should write down the topic, extract important words from that topic then find synonyms or related words. For example, when researching the question 'What was the effect of the Black Death on feudalism in the Middle Ages?', relevant keywords would include the Black Death, effect, feudalism and the Middle Ages; synonyms would

PREVIOUS PAGE: Hand and keyboard.  
(Photograph by Esther Vargas, used under CC BY-SA 2.0)

1 'Big6 Skills Overview,' Big6 website, <http://big6.com/pages/about/big6-skills-overview.php>.

RIGHT: Archive boxes.  
(Photograph by Carolina  
Prysyazhnyuk, used under  
CC BY-SA 2.0)



include the plague, feudal system and medieval Europe.

When finding keywords, students should try to use words that applicable sources – such as databases, links, archives, collections, references, research sites, museums, journals, graphs, tables and letters – might use.

#### UNDERSTANDING SEARCH RESULTS

A great way to determine if a search query has been successful is to analyse the page of results overall before looking at individual sources. If the page contains a lot of commercial products or irrelevant information, better search parameters are required. Instead of wading through pages and pages of results, a researcher should improve their search query.

#### EVALUATING THE CREDIBILITY OF A SOURCE

Students should learn to evaluate sources to determine if they are reliable, credible, trustworthy, accurate, unbiased and balanced. The sort of questions students should ask include the following:

- Is the content *relevant*? Is it useful for my purpose? Does it contain links to other relevant sources? Is it at an appropriate reading level?
- Is the source *believable*? What type of source is it? (Published or official sources are better.) Who is the author? (Subject experts are better.) When was it published? (Newer is often better.) Is the source unbiased, or at least

balanced? Does it say where it gets its information from?

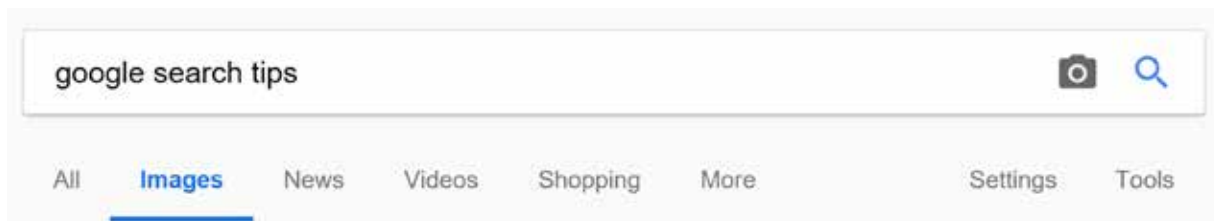
- Is the source *true*? Is it backed up by other sources? Does it *sound* right? Does it fit in with other things you know (assuming you have knowledge of the subject)?

However, these factors are not equally important. It is common for students to focus on something that is easy to elicit from a source, such as its publication date, and consider this as one of the more important factors as to its credibility. Perhaps the most important element that students should be looking out for is a statement outlining where and how the source obtained the information presented.

#### GOOGLE SEARCHING TIPS

Google-specific searching skills can be particularly helpful for students. Some useful searching tips for students are described below.

- Every word matters.
- Order matters.
- Capitalisation doesn't matter.
- Punctuation doesn't matter.
- Specific search terms are better – go from broad to more specific enquiries as you learn more while searching.
- Use 'Boolean' operators, such as 'AND,' 'OR,' and 'NOT.'
- Searching with the term 'filetype:' will narrow searches to specific file types. For example, 'trenches filetype:ppt'



will search specifically for PowerPoint documents about trenches.

- Searching with the term ‘site:’ will seek out information *within* a website. If students find an excellent collection online, this term can help them find relevant information within it. For example, ‘samurai site:tnm.jp’ will find samurai-related material from the Tokyo National Museum website.
- Limit your search using Google parameters to search for different types of results such as images, news videos, maps and books.
- When searching for videos, use Google-search for videos (<http://www.google.com/video>) rather than searching in YouTube as it searches more locations.
- Use a hyphen to exclude words and narrow searches. For example, ‘knights -newcastle’ will track down information about knights rather than the Newcastle Knights rugby league club.
- Search for a range of numbers using ‘..’. For example, ‘2001..2004’ narrows searches to between the years 2001 and 2004. ‘..2004’ searches for information before 2004. ‘2004..’ searches for information after 2004.
- An asterisk acts as a wildcard. For example, a search for ‘teen\*’ will include any text starting with ‘teen,’ such as teen, teens and teenager.
- Search for exact phrases by inserting quotation marks around the relevant text. (Also an easy way to check for plagiarism in students’ assignments!)

#### OTHER USEFUL SEARCH ENGINES AND WEBSITES

The Google Scholar website (<https://scholar.google.com.au/>) provides

access to more sophisticated scholarly literature; however, much of the material may be beyond many school-aged students. Documents often require a paid subscription (e.g. a university account), but most allow researchers to read their abstracts (summaries) for free.

WolframAlpha is a great ‘computational engine’ (<https://www.wolframalpha.com/>). While it can be hit and miss, you can insert two variables and it will not only provide relevant statistical data on the variables but also make comparisons between them.

While mainstream search engines that take a user’s history into account can be beneficial for personal use, for research purposes try using ‘private’ or ‘incognito’ mode – your search results won’t be affected by your previous search history or online activity. Alternatively, you could try a search engine like DuckDuckGo (<https://duckduckgo.com/>), which doesn’t retain users’ data.

Google even provides lesson plans for a number of search literacy lessons that allow students to put their search skills to the test ([www.google.com/intl/en-us/insidesearch/searcheducation/lessons.html](http://www.google.com/intl/en-us/insidesearch/searcheducation/lessons.html)).

#### Summary

Online searching needs to be taught as a step in the research process. Too often, students are made to do a project but are not taught the appropriate research skills. Humanities and history teachers have an obligation to develop these capabilities in students. With information literacy becoming ever more important in the digital age, the ability to use the internet critically to find trusted information is a prime example of a transferable, real-world skill. Let’s teach it.

ABOVE: Google parameters for limiting search options.