

Research is a Process

Knowing when you need information, how to find it, and being able to evaluate and organize are important skills. Information literacy enhance our personal lives, school work, and careers. Thinking about "research" as a process helps. The most popular method presented in schools is the [Big6](#). "Take Five!" presents a simple system that emphasized research as a series of tasks. The results can be used to create any type of project.

We will not talk about the final product here -- it may be a report, speech, multi-media project, Web page, video, or any other type of presentation. We will focus on gathering and evaluating information before actually using that information.

"Take Five!" Research Process

While we have presented these processes as a numbered list, in practice, it is not sequential. We are defining a set of tasks. At any point in the process, it may be valuable or appropriate to "revisit" what we have done. Preliminary research can help us shape and refine our need or topic.

The availability of suitable sources may require us to do more preliminary research to help us discover better keywords and subject headings. To get the most out of "Take Five!," do not consider it a linear set steps.

Task 1: Define Need or Topic. The first part of any research project is to think about what you want to accomplish. In school, teachers often assign topics or general subject areas. Most of us will enjoy a project more if it is based on something we are personally interested in. When looking for ideas for topics or themes, there are Web sites that can help, try [Hot Paper Topics](#), [Idea Generator](#), and [Essay Topic Generator](#).

Task 2: Preliminary Research. Let's look at an example. Reverend Dr. Martin Luther King, Jr. lived a rich life that touched many people. The life and times of Dr. King could support a wide array of topics. It's a good idea to do a little preliminary research on a general topic BEFORE selecting a specific topic.

This helps us think about what aspects of our general topic will be most interesting. Consulting an encyclopedia can be a great way to do some quick, basic research. Be sure to check out the reference section of your library or try [Encyclopedia Britannica](#), [Reference.com](#), [Encyclopedia.com](#), or [Infoplease](#).

If you are going to use a wiki, this stage is the only place to do so and never use a wiki as a formal source. And please remember, some teachers / professors will not accept the use of a wiki under any circumstances.

Task 3. Locate Sources. Once you have a fuller understanding of what you are looking for, it will be easier to do meaningful research. Use a variety of sources in different formats -- a reference librarian or library media specialist can help you get started finding material in their collection. Libraries are organized to provide "intellectual access" to resources.

This means that information is organized so that you can find it based on ideas, topics or information needs. You will find basic and advanced search strategies as well as sources for a variety of information in various formats.

Keywords versus Subject Headings

Most of us are familiar with keyword searches, where computers scan for the occurrence of terms in a document. Keyword searches can be good places to start and represent how most

search engines like [Google](#), [Yahoo](#), [Bing](#), [DuckDuckGo](#), and [Ask](#) work. You can also do keyword searches in most electronic library catalogs, but to really take advantage of how libraries are organized, you have to look for subject headings.

The problem with keyword searches is that many search terms will appear in a variety of different contexts from different documents. Keyword searches can generate many results, but the results may represent such a broad range of topics that the search becomes unmanageable. For example, a search on AIDS will retrieve items on aids for the hearing impaired, school aids, AIDS (the disease).

Professional librarians organize collections by subject headings, carefully used terms that collect resources that relate to specific topics. The advantage of using subject headings is that, once you locate appropriate subject heading for your search, the results will be more useful for your research. When using an online library catalog, try using keyword searches to get started.

When you find a good resource for your needs, see what subject headings have been used to catalog it. Then, do a subject heading search for similar resources. Usually, this just requires clicking on those subject headings, conducting a new search. You can also try to use these subject headings as keywords searches too.

Many documents that present common or overlapping information will not appear together in searches that are done by keywords. Subject headings provide connections between similar resources, even when these documents do not contain the same keywords or rankings. Library collections are organized so that information can be located by subject (cataloging or "intellectual access") and by looking at books on shelves, called browsing (classification).

Taking Notes: Paraphrase

Be sure to take careful notes, being sure to keep track of what information comes from each source. DO NOT "COPY & PASTE" OR TAKE NOTES WORD FOR WORD from a given source unless you intend to directly quote and fully cite a source. Write your notes in your own words; this is called paraphrasing. Not only does this help you better understand the information, it helps avoid problems with plagiarism (stealing someone else's work).

Start by getting the basic facts, dates, statistics, definitions, and general background information together. Basic reference books are a great source to document general facts; these will provide guides to locate more in-depth information about a topic. When researching a controversial topic, it is especially important to obtain fact and details from sources that will be acceptable to people with different views on the topic.

The Internet is full of sources, though it will be an advantage to have basic facts documented before going online. Remember, information on the 'net may or may not be "refereed," meaning edited and fact-checked, by others. Having basic facts BEFORE checking the Internet will help us when we get to our next task, evaluating the information we find. For now, be sure that online sources generally agree with facts from other sources.

Don't forget databases either. Wisconsin provides access to a number of high-quality information database resources bundled together as "[BadgerLinks](#)." Many libraries and school also have subscriptions for other academic and professional database.

Task 4: Evaluate Information. Not everything we read is generally accepted as correct, especially when using the Web. Traditional print sources (books, magazines, newspapers, etc.) have editors and publishers that work with authors to be sure information reflects standards.

This doesn't mean that the information is "better" or "more true." It means that we can easily identify sources and judge the quality of these source based on the publisher's reputation. Savvy information users evaluate ALL information they find based on:

1. **Accuracy.** The first step when evaluating is to be sure that information generally agrees. This is why starting a research project by looking at the reference section in a library is a good idea.
 - Basic information and concepts should be the same from source to source. If not, be careful.
 - Sources that contain errors, even many "typos," should be used with care. After all, if a source did not take the time to verify the basics and present it in reasonably correct form, why should anyone believe the rest of the information in that source.
 - Always look to see if a source is advocating an idea or contains bias. Be careful when a source has an "agenda" or strong point of view. The information may or may not be good. It is likely that the information does not fully present other points of view.
2. **Authority.** Why is this source qualified to give you information? Are they an "expert?" If so, are their credentials clearly identified? Are they affiliated by another organization, company, or institute? If so, is there bias?
 - Can you tell who is the publisher? This is easy with traditional print sources, but can be difficult on the Web.
 - Is there contact information? Does the author indicate that they are open to hearing from others or fielding requests for clarifications or additional information?
3. **Content.** What type of information is being presented and how does the author intend the information to be used? Does the author identify any limitations for their work?
 - Who is the intended audience? Students should be careful that sources are appropriate for their grade level.
 - Is the purpose of the information to inform, advocate, or sell? This usually determines its completeness. In general, sources that only seek to inform present a more balanced view than those that promote ideas or sell products and services.
4. **Currency.** Information has a time value -- even historical information gets reviewed and revised over time. Just because an idea was generally accepted in the past does not mean it is accepted today.
 - Some information can come from older sources and still be valid. Try to find current information.
 - Dates of birth and death and some other types of facts are likely to be accurate even when a reliable source becomes old.
 - Be careful, some information from older sources has little or no value today. Traditional print sources clearly identify when they were published -- be careful with Web pages. If you cannot identify the date that a site was created or updated, it is probably not a good source. Check the links on a Web page; if they do not

work or are not being kept up to date, the rest of the information is probably not being updated either.

5. **Documentation.** Even when a site is accurate, has authority, is content appropriate, and current; be sure to look for documentation where the author obtained their facts. When a source intends to inform, the author usually identifies their sources or resources for further study.
 - Does a source contain a bibliography or identify the sources that were used to create a resource? Does this list of sources appear fairly comprehensive or balanced?
 - Are the sources that were used to create a resource also reasonably current? If other Web pages are part of the list of sources, are they still working links?

Task 5: Document Sources. Keeping track of where information comes from is an important part of the research process. Representing the work of another person as your own is plagiarism - it is stealing. Students can expect to be disciplined or receive failing grades if they plagiarize. It is also possible to be sued. Like every other law, copyrights demand compliance. Using someone else's work without permission or under "fair use" without citing the source is a violation of intellectual property rights.

On a more positive note, documenting sources when conducting research makes the job easier. Few things will be more frustrating than having to go back and find the original source from some fact, figure, quote, or piece of information AFTER deciding to use that material in a project. It is much easier to keep track of where ALL information comes from BEFORE starting to create a project. Keeping track of sources while gathering information will also make it easier to go back and review good sources to pick up more good information. Always carefully document the sources that are used when researching. p>

Teachers often have expectations as to what types of sources are valid for a term paper or presentation. Many projects, especially those done in school, will have standard formats to organize and cite information. If a format is specified, it will be helpful to write down source documentation in the required format -- this will make it less likely that a given resource will need to be looked up again because important information is missing. The most common formats for documentation are MLA and APA.

Whether taking notes on note cards, paper, or computer, clearly identify where information comes from, carefully including all information that will be required to cite that source. Be sure that you know what format you will use to cite sources or create a bibliography. This will make it less likely that you will forget important information that is required to properly cite your sources.

Conclusion. Do you see that our "Take Five!" research process is designed to help clarify an information need before actually conducting a full-scale search. Before you fully decide on a topic; be sure to do some preliminary research, after all, it will be much easier to create an interesting topic when you check your understanding before committing yourself to an extensive research project. Our process focuses on defining needs and then finding sources.

We have chosen to omit how this information is used to create a specific project, because once we have defined a need, located appropriate resources, and documents our resources, we are ready to put that information to work creating any number of projects. Just remember, sometimes things do not go as planned. Our process is presented as a set of tasks, not a series of steps. At any point, the research process may require us to reevaluate our topic, sources, or how we have evaluated them.