Researching your topic

The purpose of your research should be to gain general background information about your topic. It is important to find and read as much background information as possible. For example, if your topic were, "Which Bridge Design Provides the Most Support?" you would need to research about the design of bridges. Encyclopedias (including online encyclopedias) and dictionaries are not to be used as a source, but may help you identify useful keywords.

Let's get started:

- List your key words and brainstorm additional keywords. For example, let's imagine that you have asked this question: Does drinking milk help decrease spiciness better than water or Pepsi? The obvious keywords would be milk, spiciness, Pepsi, and water. But you need to ask more specific questions. What exactly is spiciness? What is it in the liquid that affects the spiciness? This should lead you to some more specific keywords. If you found your project on Science Buddies, suggested research topics and even links to research websites are often found on the page that describes your project. It is often titled "Terms, Concepts and Questions to Start Background Research" followed by sample research questions. Also, be sure to click on the links if there are any under the "Bibliography" section.

- List the type of sources where you might find information (books, CD-ROMs, science magazines, Internet) and where they might be found (school library, home computer, computer lab, public library). **Do NOT go to a search engine and type in your investigative question. By doing so, all you are going to get are projects like yours that have been done in the past.**

- Making Use of the Hernando County Library's Online Resources: Go to www.hcpl.lib.fl.us and search the catalogue by subject using your keywords

- Scan the sources first. Look more closely at those that seem relevant. Check out books and/or magazines that have good information. Read what you have gathered.

- Write all of your research notes **in your own words** and document your sources in your Science Fair Project Log Book as you go. You should have at least 3 pieces of information: notes, quotes, etc. from each source you find. The more information you gather, the easier it will be to write your research paper. **You should have a minimum of 5 sources.**

- Go to *www.citationmachine.net* to create citations in MLA format. The citation can then just be copied and pasted onto a word processor document. Its that easy! If you need help with this, please see your teacher.

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Guide for Citing Sources in MLA Format

Books

Author(s). Title of Book. Place of Publication: Publisher, Year of Publication.

Magazine or Newspaper

Author(s). "Title of Article". Title of Source Day Month Year: pages.

A web site

Author(s). Name of Page Date of Posting/Revision. Name of institution/organization affiliated with the site. Date of Access <electronic address>.

OR

An article on a web site
Author(s). "Article Title." Name of web site. Date of posting/revision. Name of institution/organization affiliated with site. Date of access <electronic address>.

Interview or Letter Received

Author(s). Type of communication. Day Month Year of communication.

Research Paper Checklist

- ✓ Have you defined all the important terms?

- ✓ Have you clearly answered all your research questions?

- ✓ Does your background research enable you to make a prediction of what will occur in your experiment?

- ✓ Will you have the knowledge to understand what causes the behavior you observe?

- ✓ Does your research include the following?
    - Currently accepted theories, facts, and data?
    - Relevant mathematics / equations (if applicable)
    - Key discoveries and early researchers

- ✓ Have you referenced all information copied from another source and put any phrases, sentences, or paragraphs you copied in quotation marks?

- ✓ Is every fact or picture in your research paper followed by a citation telling the reader where you found the information?

- ✓ Does your research paper include?
    - A title page? (a page by itself with the title of your project)
    - Your report
    - Bibliography

- ✓ Have you used the proper capitalization and punctuation?

- ✓ Have you checked your spelling and grammar? Use your spelling and grammar check programs on your electronic devices!

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Helpful Websites for Completing a Science Fair Project

A Student's Guide to Recognizing Plagiarism and Avoiding It:
https://www.enago.com/academy/how-to-avoid-plagiarism-in-research-papers/

Metric conversion charts: http://curezone.com/conversions.asp
http://www.fitnessandfreebies.com/conversions.html

Bibliography help:
https://www.sciencebuddies.org/science-fair-projects/science-fair/writing-a-bibliography-examples-of-apa-mla-styles
https://cite4me.org/bibliography/

Graphing Tools: http://nces.ed.gov/nceskids/createagraph/default.aspx

How to write a research paper:
https://www.aresearchguide.com/1steps.html
http://student-tutor.com/blog/how-to-write-a-research-paper-in-11-steps/

Citing your sources:
http://www.citationmachine.net/mla/cite-a-website