SCIENCE FAIR HANDBOOK
River City Christian School
2013-2014

The annual science fair is one of the highlights of the school year at River City Christian School. Students and teachers begin to get excited when spring comes and the time for the science fair nears. There is an air of anticipation, excitement, and dread. In order to help with the dread and fear of the project, this manual was born. Hopefully, as many questions as possible have been answered here.

This manual begins with choosing a topic for your project and continues through to the presentation to the judges. In putting the manual together, we have tried to include how to choose the topic, how to prepare the project, and how to present it to the judges at the science fair. If students know what to expect and where to find answers to their questions, some of the fears of the science fair can be alleviated.

The one thing to remember is that science is fun and doing a science project for the science fair can be rewarding. This manual is here to help you. Relax, have fun, and be prepared to amaze your parents, your teachers, and yourself.

CHOOSING A SCIENCE FAIR PROJECT

When choosing a science fair project, allow your God given curiosity to guide you. Has there ever been a question you have no answer for at the time? Do you ever wonder how things work or why things happen the way they do? Why does a plant grow in your neighbor's yard but not in yours? What type of fertilizer does your neighbor use that you don't? These questions can lead to a great science project. You can design an experiment that will help you answer your questions.

When you begin thinking about your project, think about something that interests you. Maybe something you have done in your science class has caught your attention and you want to learn more. Make sure your topic is something for which you can design an experiment. Your ideas may be too broad, and you will need to narrow them. Maybe your ideas are too small. Discuss your ideas with your parents and your science teacher. They are good sources of information for you.

Begin with an area of science that you like. This may be life science, earth science, physical science, chemistry, or physics. Once you have chosen a branch of science, try to narrow your topic. Do research. You may use the Internet, the library, your science teacher, science book, or any source you have. Once you have it narrowed down you, you are ready to begin. **YOU MUST FOLLOW THE SCIENTIFIC METHOD TO COMPLETE YOUR PROJECT.**

You will need to begin a science journal as soon as you choose a topic. This journal will be very helpful as you proceed with your project. Write down everything even if you feel it is not important. Making notes to yourself will help when you begin writing your paper and putting your display together. Write the date on each page. These dated pages will be important for your checkpoint due dates in science class. When you have your topic and journal, you are ready to begin your project.

STEP 1: QUESTION AND RESEARCH

The question you are asking yourself becomes the problem that you are seeking to solve. **EXAMPLE: Does adding salt to water make it boil faster?** Once you have formulated your question and problem, you will begin to research your topic. It is important to do research on the topic. Search to see if any work has been done on this topic. Research the background of your topic. Write notes in your journal.

STEP 2: HYPOTHESIS

The second step in the scientific process is making a prediction about the answer to your question. This prediction is based on what you have observed and your research. It is called you hypothesis. Your hypothesis is a written statement answering your question. Remember that this is just a guess. It may not be the correct answer.
EXAMPLE: I believe adding salt to the water will make it boil faster.

STEP 3: PROCEDURE //EXPERIMENT

The next step is the procedure or your experiment. In this step you describe how you will plan and set up the experiment to test your hypothesis. This is the most detailed of the steps and will take the longest time to complete. You should do your experiment more than once to test the hypothesis. Make sure that you have only one variable.
EXAMPLE: If you want to test whether salt will make the water boil faster, test the water with salt and without salt. Do not add anything else to the water.

STEP 4: RESULTS AND CONCLUSIONS

The final steps in the scientific process are the results and conclusions. In these steps you will analyze the findings of your experiment and determine if your hypothesis was correct or incorrect. **YOUR HYPOTHESIS DOES NOT HAVE TO BE CORRECT. YOU MAY PROVE THAT YOUR IDEA WAS COMPLETELY WRONG. THAT IS PERFECTLY OK.** Record all your data in your journal, and then you will be ready to complete the project by creating your presentation board.

Now that the work on your project has been completed, you will need to begin work on your display board and your oral presentation. You have been keeping records in your journal, so this step should be easy. You may choose to present your project in a variety of ways on your display board. You may use graphs, charts, illustrations, pictures, or any combination of ideas. Use your imagination and creative abilities.

The display should capture the attention of your audience. It should provide a clear, concise explanation of your project. A display board will be provided by the school. **YOU WILL BE REQUIRED TO INCLUDE A BIBLE VERSE THAT APPLIES TO YOUR PROJECT. THIS VERSE MUST BE DISPLAYED ON YOUR WRITTEN REPORT AND ON YOUR BOARD. THIS APPLIES TO ELEMENTARY AND TO MIDDLE AND HIGH SCHOOL.**
Your display board should be attractive and organized. You may use stick on letters, computer generated letters or titles, or hand created wording. This part is left up to you. The letters of the title should be the largest and most eye-catching. You may want to use colored paper as a background for your information. Use the color appropriately. Too much color will detract from the display.

DISPLAY BOARD FOR ELEMENTARY AND 7TH GRADE ONLY

	TITLE	
PROBLEM		RESULTS
	PROCEDURE INCLUDE PHOTOS OR DRAWINGS HERE	
HYPOTHESIS		CONCLUSION
MATERIALS		BIBLE VERSE

DISPLAY BOARD FOR 8TH GRADE THROUGH 12TH GRADE

ABSTRACT	TITLE MATERIALS	RESULTS
QUESTION/PROBLEM	PROCEDURE (THIS WILL INCLUDE YOUR PHOTOS)	CONCLUSIONS
HYPOTHESIS		BIBLE VERSE

PLEASE FOLLOW THE GUIDELINES FOR YOUR GRADE LEVEL. IF YOU HAVE ANY QUESTIONS, JUST ASK.

WRITING YOUR ABSTRACT (THIS IS FOR GRADES 8-12 ONLY)

An abstract is required for the project if you are in grades 8 through 12. It is not required for 7th grade and below. The abstract for a science project is a 3 PARAGRAPH SUMMARY of your project. The first paragraph includes your question and hypothesis. The second paragraph summarizes the experiment that you performed. The final paragraph includes results and conclusions. This abstract will be written at school in your science class. You will then need to take it home and type it for your display and to be included with your paper. Writing the abstract should be simple since you have kept a journal for your project.

WRITING YOUR RESEARCH PAPER (REQUIRED FOR ALL GRADE LEVELS)

INSTRUCTIONS FOR THE RESEARCH PAPER THROUGH 7TH GRADE

The elementary science fair report will be written, section by section, in English class during the month of January with the help of the English teacher. By the beginning of January, the student must know the topic for his project so that for the elementary the teacher may gather materials from the library. The high school students will be responsible for their research materials. The class will study types of research materials and research paper requirements during the first of January and begin composing reports mid to late January. Although the report is written in class, the student will need to know what his purpose and hypothesis are and what process he followed in his experiment along with its results and conclusions in order to write the paragraphs of his report. Since your student will be keeping a journal for the project, these items will be included there and may be used to compose the paragraphs of the report. Once the report has been written, more or less, it will be sent home for approval and final copy. At this time parents may need to help their student complete his report; and if desired, the report may be typed by the student. High school and middle school papers must be typed. The report will be returned to school and accompany the student's science fair exhibit.

The report for elementary, composed in English class, will include the following:

1. Plastic report cover, provided by the school.
2. Cover page, to include the title of the report, name of student, date of report, and Bible Verse for the report.
3. Outline, using proper outline form.
4. Body of report, with title at the top of the first page only.

Paragraph one: Purpose and Hypothesis

Include three sentences,

(1) Purpose: For your purpose sentence, ask yourself the following question, "Why did I choose this topic?" Write a sentence that answers that question. Never begin a sentence with the word *I*.

(2) Questions: For your project sentence, copy your question from your journal.

(3) Hypothesis: For your hypothesis, copy your hypothesis from your journal.

Paragraph two: Research

After you have finished writing research notes on your note cards, begin drafting your research paragraph. Begin the paragraph with a topic sentence such as "In my research, I discovered many interesting facts" or "There is much to learn about my topic, and I found some interesting facts in what I read." If you use

sentences copied directly from a book or other source, you have to use quotation marks around what you copied and give the name of the source and page where you found it. Example: "Birds bones are hollow, hence they are light and can fly more easily." (Sampson, p. 33)

Paragraph three: Experiment

This paragraph must begin with a topic sentence such as "In order to test my hypothesis, I gathered materials and did an experiment." The next sentence will say something like "The materials I used included....(list them)." The last part of the paragraph will explain what you did for your experiment. If there was more than one step, list them in the order you did them.

Paragraph four: Results from Experiment

This paragraph will begin with a topic sentence such as "When my experiment was completed, there were some results which I did not expect. (... or there were some results I expected.)." After the topic sentence, clearly write what the results of your experiment were. This is not the conclusion....simply what happened with your experiment, **NOT** whether it proved or disproved your hypothesis.

Paragraph five: Conclusions

Begin this paragraph with a topic sentence such as, "My hypothesis stated that...." (write your hypothesis statement again.) Continue the paragraph with a sentence such as, "In my research and experiment, I discovered that....." Write what you learned. Was your hypothesis correct, was it incorrect? There is nothing wrong with an incorrect hypothesis and in finding another answer.

5. Bibliography or Sources, using proper bibliography form.

WRITING THE RESEARCH PAPER FOR GRADES 8-12

The papers for the 8th through 12th grades will be in the following order with no exceptions:

Title page (title of the project, your name and the date, and your Bible Verse)
Abstract
Report
Bibliography

All papers for grades 8-12 must include citations. This will be discussed with you as

you begin writing the papers. I have enclosed sheets on how to do research and how to prepare your paper. I have also enclosed a copy of a paper written in the correct APA format. This will be the only acceptable format for these science papers. Please ask questions if you need help. I am also available after school for help if you need it.

Samples of well organized and well written science fair projects can be found at sciencebuddies.org. You will also find an extensive list of topics for projects. This site is well developed and will be very helpful.

I have attached a copy of the instructions given to the judges. This will give you an idea of what the judges are looking for and the types of questions they will ask. You will also find a copy of the judging sheet. This lets you know how they will score your project.

Once the projects are underway, you will be given a list of due dates and expectations for the science project. Due dates are adhered to strictly. Don't worry about the science fair. Don't see it as a chore. Work on it a little at a time, and you won't be overwhelmed by it.

Remember if you need help, ask. Your teachers are good sources of information. Good luck.

Science Fair Project Background Research Plan

Key Info

Background research is necessary so that you know how to design and understand your experiment. To make a **background research plan** -- a roadmap of the research questions you need to answer -- follow these steps:

1. Identify the keywords in the question for your science fair project. Brainstorm additional keywords and concepts.
2. Use a table with the "question words" (why, how, who, what, when, where) to generate research questions from your keywords. For example:

   What is the difference between a series and parallel circuit?
   When does a plant grow the most, during the day or night?
   Where is the focal point of a lens?
   How does a java applet work?
   Does a truss make a bridge stronger?
   Why are moths attracted to light?
   Which cleaning products kill the most bacteria?

   Throw out irrelevant questions.

3. Add to your background research plan a list of mathematical formulas or equations (if any) that you will need to describe the results of your experiment.
4. You should also plan to do background research on the history of similar experiments or inventions.
5. Network with other people with more experience than yourself: your mentors, parents, and teachers. Ask them: "What science concepts should I study to better understand my science fair project?" and "What area of science covers my project?" Better yet, ask even more specific questions.

Why the Need for Background Research?

So that you can design an experiment, you need to research what techniques and equipment might be best for investigating your topic. Rather than starting from scratch, savvy investigators want to use their library and Internet research to help them find the best way to do things. You want to learn from the experience of others rather than blunder around and repeat their mistakes. A scientist named Mike Kalish put it humorously like this: "A year in the lab can save you a day in the library."

Background research is also important to help you understand the theory behind your experiment. In other words, science fair judges like to see that you understand why your experiment turns out the way it does. You do library and Internet research so that you can make a prediction of what will occur in your experiment, and then whether that prediction is right or wrong, you will have the knowledge to understand what caused the behavior you observed.

Making a Background Research Plan: How to Know What to Look For

When you are driving a car there are two ways to find your destination: drive around randomly until you finally stumble

Finding Information for Your Research Paper

Key Info

- Most teachers will require you to find at least three sources of information.
- How to find information:
    - Find and read the general information contained in an encyclopedia, dictionary, or textbook for each of your keywords.
    - Use the bibliographies and sources in everything you read to find additional sources of information.
    - Search periodical indexes at your local library.
    - Search the Internet to get information from an organization, society or online database.
    - Broaden your search by adding words to your search phrases in search engines. Narrow your search by subtracting words from or simplifying your search phrases.
- When you find information, evaluate if it is **good** information:

Good References	Bad References
Come from a credible source	Come from a source with poor credibility
Not too old	Out of date
Not biased	Not objective and fair, biased towards one point of view
Free of errors	Prone to errors
Properly cite the original source of all information	Do not cite where the information came from
Easy for other people to find or obtain	Difficult for others to obtain

How to Find Information

No matter how you do your background research, record your sources and take good notes as you go. Your teacher may be able to offer you some tips.

Library Research

One of the most valuable resources at the library is not a book, but a person. Public librarians, college librarians and certified school librarians are specially trained to teach information literacy. Librarians are excellent sources for

organizing research, for teaching how to search, how to read and use citations, how to narrow down web searches, and how to winnow out the good from the bad. Many public libraries also have virtual reference services, where a client can online chat, email or talk on the phone with a reference librarian. So, be smart; talk to your librarian.

Often the best place to start your background research is by looking up your keywords in an encyclopedia, dictionary, or textbook. Your library may have specialized dictionaries for different topics like science, sports, music, and so on, which offer more complete information than a regular dictionary. Ask your reference librarian to help you.

"Read the background information and note any useful sources (books, journals, magazines, etc.) listed in the bibliography at the end of the encyclopedia article or dictionary entry. The sources cited in the bibliography are good starting points for further research.... By using this technique of routinely following up on sources cited in bibliographies, you can generate a surprisingly large number of books and articles on your topic in a relatively short time" (Engle 2003).

You can also check the subject headings of books and articles as you look them up in the library catalog. Check to see if other books in the same subject area contain relevant information.

Periodicals are printed material like magazines and newspapers. Depending on your topic, they may also contain useful information. You can look up your keywords in a printed index such as the Reader's Guide to Periodical Literature, which covers popular magazines. Your library may have a number of periodical indexes in both printed and online forms. Check with your reference librarian.

One little-known fact about public libraries is that they often pay for online resources that are generally inaccessible to the public. Using computers at the library, or sometimes by logging on at home with your library card number, you can gain access to information unattainable in any other way.

In addition, branch libraries are part of a larger library system. Although your neighborhood library may be physically small, it has access to all the resources of the whole city or county library system. Interlibrary loans of books and documents is also possible. Many libraries have loan agreements with other libraries out of county, out of state or out of country. Tell your librarian the book you want and he or she can probably obtain it for you.

Internet Research

There are two primary ways to search for information on the Internet. The first is to use a search engine such as Google or Yahoo!:

- http://www.google.com (http://www.google.com)
- http://www.yahoo.com (http://www.yahoo.com)

Search engines try to index everything on the Internet. The second way to search is using a subject portal. Subject portals list just a small portion of the information on the Internet, but the sites listed have been checked for relevance. Two popular subject portals are:

- Librarians' Index to the Internet (http://lii.org/)
- WWW Virtual Library (http://vlib.org)

You can begin by entering your keywords one at a time to search for information in search engines and subject portals; however, this will probably bring up too much irrelevant information. See "Finding Too Much or Too Little Information" below for how to improve your search results.

If you want some advanced tips on using the Internet to find information, here are two good sites. There is valuable information here even for people who think that they are good at Internet searching.

- http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html (http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html) A tutorial offered by the Teaching Library at the University of California at Berkeley.
- Librarians' Index to the Internet: Internet Guides and Search Tools. (http://lii.org/pub/topic/netsearch) Check out the tips in "Internet Searching."

To do an internet search for books containing information about a specific science fair project, the Science Fair Project Index (developed by the Akron Summit Public Library) is a great place to start. The Index is designed to allow the user to locate a particular experiment by the general topic; by keywords in the experiment title or book information; by grade level; by the materials or equipment employed; or by the principle demonstrated.

- http://www.akronlibrary.org/scifair/ (http://www.akronlibrary.org/scifair/)

Before you begin Internet research, review the Science Buddies Internet Safety Guide (http://www.sciencebuddies.org/science-fair-projects/project_ideas/Internet_Safety.shtml) with your parents. This guide offers many important tips to help you stay safe online, such as:

- Email addresses, user account names, and screen names should never include your name, birthday, name of your school, or any combination of personally identifiable information.
- Don't assume blogging is private. It's possible for search engines to pick up the information you post. If you publish photos or links to private websites on your blog, you also reduce your level of protection. Check out your blog host's setting options to find out if you can turn off some of these features, and be cautious of what you post on your blog.
- Never allow a stranger to join a buddy list, a chat, or an IM conversation.

Finding Too Much or Too Little Information

If you are finding too much information, for example pages and pages of irrelevant hits on Google or a periodical index, you need to narrow your search. You can narrow your search by borrowing some of the terms in your research questions. For example, let's imagine that searching on "milk" brings up too much irrelevant information about cows. Here are the research questions we listed having to do with milk:

- What is the composition of milk, Pepsi, and water?
- What are the properties and characteristics of milk, Pepsi, and water?

Try searching on:

- milk composition
- milk properties characteristics

This will narrow your search, and hopefully give your more relevant results.

If you aren't finding enough information, you need to simplify your search. Let's imagine that searching on "measuring spiciness" isn't finding what you want. Try searching on:

- measure spiciness
- spiciness
- spice

Most online search engines and periodical guides have instructions about how to narrow and broaden searches. Read the instructions! (Sorry, do we sound like your teacher?) Here are some places to find additional information:

- http://www.google.com/help/refinesearch.html (http://www.google.com/help/refinesearch.html) This is where Google talks about how to improve your searches.
- Librarians' Index to the Internet: Internet Guides and Search Tools. (http://lii.org/pub/topic/netsearch) Check out the tips in "Internet Searching."

Too Complicated or Too "Babyish" Information

Sometimes the information you find will be relevant, but either too complicated given your science background or too babyish. This is a problem that we all experience. Just keep looking and ask for advice if you're really stuck.

Your Goal

Never forget, the goal of your searching is to find information to answer the research questions you asked about your topic. Don't stop looking until you have sources that will answer your questions! Be sure to ask for help from mentors, parents, and teachers if you're having trouble.

A Checklist for Evaluating References

What Makes a Good Reference?	For a Good Reference, You Should Answer "Yes" to Every Question
Does your reference come from a credible source?	Yes / No
Is your reference current?	Yes / No
Is your reference objectively written, not biased towards one point of view?	Yes / No
Is your reference free of errors?	Yes / No
Does your reference properly cite its original sources?	Yes / No
Is the reference easy for other people to find or obtain?	Yes / No

SCIENCE BUDDIES

Writing a Research Paper for Your Science Fair Project

Key Info

- As you do your research, follow your background research plan (http://www.sciencebuddies.org/science-fair-projects/project_background_research_plan.shtml) and take notes from your sources of information. These notes will help you write a better summary.

- The purpose of your **research paper** is to give you the information to understand why your experiment turns out the way it does. The research paper should include:

    - The history of similar experiments or inventions
    - Definitions of all important words and concepts that describe your experiment
    - Answers to all your background research plan questions
    - Mathematical formulas, if any, that you will need to describe the results of your experiment

- For every fact or picture in your research paper you should follow it with a citation telling the reader where you found the information. A citation is just the name of the author and the date of the publication placed in parentheses like this: (Author, date). This is called a reference citation when using APA format and parenthetical reference when using the MLA format. Its purpose is to document a source briefly, clearly, and accurately.

- If you copy text from one of your sources, then place it in quotation marks in addition to following it with a citation. Be sure you understand and avoid plagiarism! Do not copy another person's work and call it your own. Always give credit where credit is due!

- Most teachers want a research paper to have these sections, in order:

    - Title page (with the title of your project, your name, and the date)
    - Your report
    - Bibliography
    - Check with your teacher for additional requirements such as page numbers and a table of contents

e anual how ur paper to be organized

Overview

Year after year, students find that the report called the research paper is the part of the science fair project where they learn the most. So, take it from those who preceded you, the research paper you are preparing to write is super valuable.

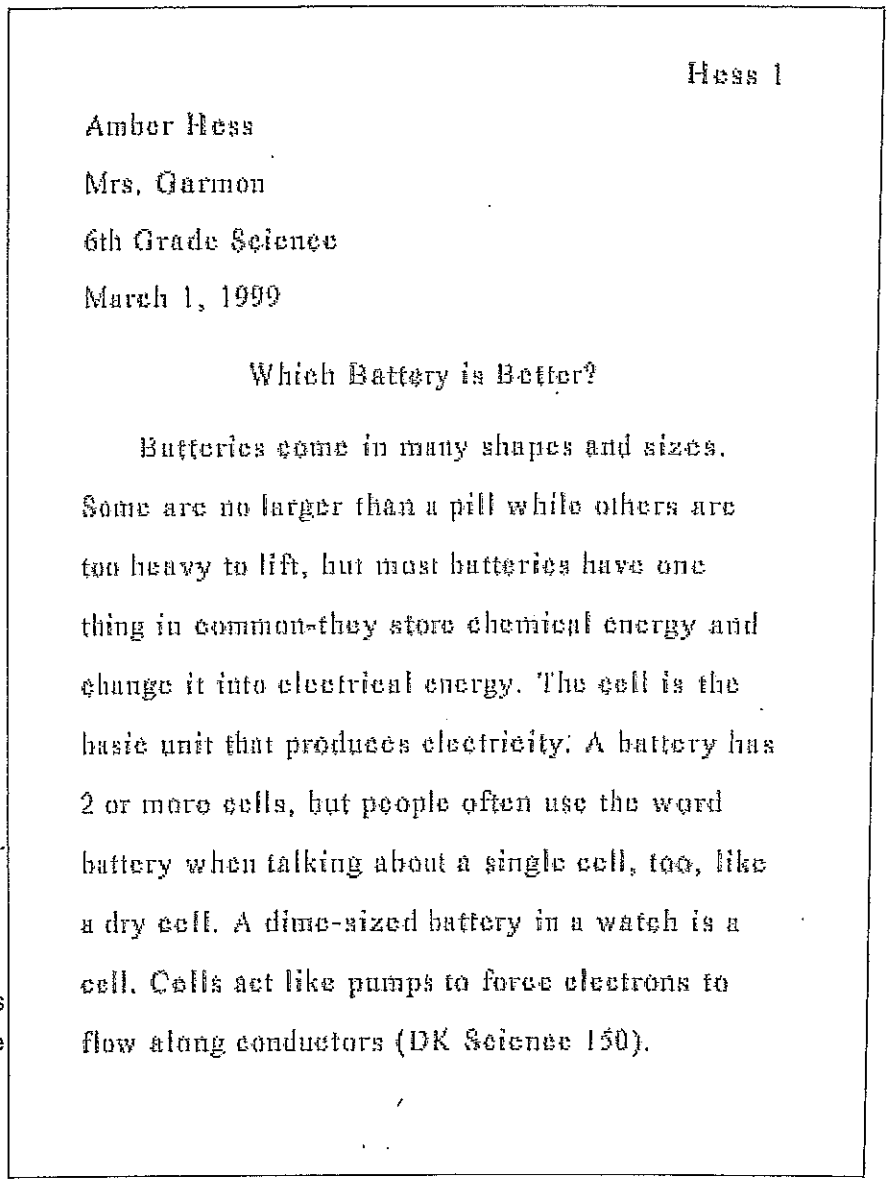
What Is a Research Paper?

The short answer is that the research paper is a report summarizing the answers to the research questions you generated in your background research plan (http://www.sciencebuddies.org/science-fair-projects/project_background_research_plan.shtml). It's a review of the relevant publications (books, magazines, websites) discussing the topic you want to investigate.

The long answer is that the research paper summarizes the theory behind your experiment. Science fair judges like to see that you understand why your experiment turns out the way it does. You do library and Internet research so that you can make a prediction of what will occur in your experiment, and then whether that prediction is right or wrong, you will have the knowledge to understand what caused the behavior you observed.

From a practical perspective, the research paper also discusses the techniques and equipment that are appropriate for investigating your topic. Some methods and techniques are more reliable because they have been used many times. Can you use a procedure for your science fair project that is similar to an experiment that has been done before? If you can obtain this information, your project will be more successful. As they say, you don't want to reinvent the wheel!

If these reasons sound to you like the reasons we gave for doing background research, you're right! The research paper is simply the "write-up" of that research.



Hess 1

Amber Hess

Mrs. Garmon

6th Grade Science

March 1, 1999

Which Battery is Better?

Batteries come in many shapes and sizes. Some are no larger than a pill while others are too heavy to lift, but most batteries have one thing in common-they store chemical energy and change it into electrical energy. The cell is the basic unit that produces electricity. A battery has 2 or more cells, but people often use the word battery when talking about a single cell, too, like a dry cell. A dime-sized battery in a watch is a cell. Cells act like pumps to force electrons to flow along conductors (DK Science 150).

Special Information to Include in Your Research Paper

Many science experiments can be explained using mathematics. As you write your research paper, you'll want to make sure that you include as much relevant math as you understand. If a simple equation describes aspects of your science fair project, include it.

Writing the Research Paper

Note Taking

As you read the information in your bibliography, you'll want to take notes. Some teachers recommend taking notes on note cards. Each card contains the source at the top, with key points listed or quoted underneath. Others prefer typing notes directly into a word processor. No matter how you take notes, be sure to keep track of the sources for all your key facts.

How to Organize Your Research Paper

The best way to speed your writing is to do a little planning. Before starting to write, think about the best order to discuss the major sections of your report. Generally, you will want to begin with your science fair project question so that the reader will know the purpose of your paper. What should come next? Ask yourself what information the reader

needs to learn first in order to understand the rest of the paper. A typical organization might look like this:

- Your science fair project question or topic
- Definitions of all important words, concepts, and equations that describe your experiment
- The history of similar experiments
- Answers to your background research questions

When and How to Footnote or Reference Sources

When you write your research paper you might want to copy words, pictures, diagrams, or ideas from one of your sources. It is OK to copy such information as long as you reference it with a citation. If the information is a phrase, sentence, or paragraph, then you should also put it in quotation marks. A citation and quotation marks tell the reader who actually wrote the information.

For a science fair project, a reference citation (also known as author-date citation) is an accepted way to reference information you copy. Citation referencing is easy. Simply put the author's last name, the year of publication, and page number (if needed) in parentheses after the information you copy. Place the reference citation at the end of the sentence but before the final period.

Make sure that the source for every citation item copied appears in your bibliography.

Reference Citation Format

Type of Citation	Parenthetical Reference MLA Format (Author - page)	Reference Citation APA Format (Author - date)*
Work by a single author	(Bloggs 37)	(Bloggs, 2002)
Direct quote of work by single author	(Bloggs 37)	(Bloggs, 2002, p. 37)
Work by two authors	(Bloggs and Smith 37)	(Bloggs & Smith, 2002)
Work by three to five authors (first time)	(Kernis, Cornell, Sun, Berry, and Harlow 183-185)	(Kernis, Cornell, Sun, Berry, & Harlow, 1993)
Work by three to five authors (subsequent times)		(Kernis et al., 1993)
Work by six or more author	(Harris et al. 99)	(Harris et al., 2001)
Two or more works by the same author in the same year (use lower-case letters to order the entries in bibliography)		(Berndt, 1981a) (Berndt, 1981b)
Two or more works by the same author	(Berndt, Shortened First Book Title 221) then (Berndt, Shortened 2nd Book Title 68)	
Two or more works in the same parentheses	(Berndt 221; Harlow 99)	(Berndt, 2002; Harlow, 1983)
Authors with same last name	(E. Johnson 99)	(E. Johnson, 2001; L. Johnson, 1998)
Work does not have an author, cite the source by its title	(Book Title 44) or (Shortened Book Title 44)	(Book Title, 2005) or ("Article Title", 2004)
Work has unknown author and date		("Article Title", n.d.)

* APA Note: If you are directly quoting from a work, you will need to include the author, year of publication, and the

Bibliography

Key Info

- Make a list to keep track of ALL the books, magazines, and websites you read as you follow your background research plan (http://www.sciencebuddies.org/science-fair-projects/project_background_research_plan.shtml). Later this list of sources will become your **bibliography**.
- Most teachers want you to have at least three written sources of information.
- Write down, photocopy, or print the following information for each source you find. You can use the Science Buddies Bibliography Worksheet (http://www.sciencebuddies.org/science-fair-projects/project_bibliography_worksheet.pdf) to help you.

Collect this information for each printed source:

- author name
- title of the publication (and the title of the article if it's a magazine or encyclopedia)
- date of publication
- the place of publication of a book
- the publishing company of a book
- the volume number of a magazine or printed encyclopedia
- the page number(s)

Collect this information for each Web Site:

- author and editor names (if available)
- title of the page (if available)
- the company or organization who posted the webpage
- the Web address for the page (called a URL)
- the last date you looked at the page

- The bibliographic information for different types of resources are located in different places, so you may need to do some detective work to get all of the information for your bibliography. Try looking in these places:
  - the title page of a book, encyclopedia or dictionary
  - the heading of an article
  - the front, second, or editorial page of the newspaper
  - the contents page of a journal or magazine
  - the header (at the top) or footer (at the bottom) of a Web site
  - the *About* or the *Contact* page of a Web site
- When it is time to turn in your Bibliography, type all of your sources into a list. Use the examples in MLA Format Examples (http://www.sciencebuddies.org/science-fair-projects/project_mla_format_examples.shtml) or APA Format Examples

Based on the Sixth Ed. of *the Publication Manual of the American Psychological Association.* Updated September 19, 2012.

PROVIDE A "RUNNING HEAD" OR SHORT TITLE OF YOUR PAPER IN ALL CAPS FOR EACH PAGE OF THE PAPER

Each page is numbered starting with the title page.

The recommended typeface is Times New Roman with a 12 point font size.

The title of your paper is centered and positioned in the upper half of the page. It should be no longer than 12 words.

A Guide for Writing APA Style Research Papers

Susan B. Smith

Student's name: first, middle initial, last.

Capital Community College

Institutional affiliation

The running head or short title

An abstract is a brief comprehensive summary of the paper between 150 and 250 words. Do not add to or comment on the body of the work here. It provides the reader with a brief overview of the article.

Page number

Abstract

Type the abstract in block format, one paragraph, no indentations and double spaced.

This paper is a guide to writing a general paper in according to the Publication Manual of the American Psychological Association. The guide instructs a user on how to format a paper in APA style, illustrating structure, style and content, as well as presenting detailed examples of references cited, including print examples of books, magazine articles and reference works. Additional examples are provided for electronic versions of the above.

Keywords: APA, research papers, format, style guide

Check with your instructor to see if an abstract and/or keywords are required elements of your paper.

Page 3 begins the body of the paper.

1 inch margin

Running head on every page

Type and center the title of the paper on this page. Do not bold or underline.

A Guide for Writing APA Style Research Papers

1 inch margins on all sides

1 inch margins on all sides. Leave right side ragged and do not hyphenate words.

There are several different types of articles appropriate for publication in the APA or American Psychological Association style. These include reports of empirical studies, literature reviews, theoretical articles, methodological articles, and case studies. Each of these types of articles follows a proscribed format. Refer to the Publication Manual of the American Psychological Association, 6th edition for the most up to date and comprehensive details of setting up your manuscript. This paper will serve as a general guide only, and as always, your instructor has the final word on the format and style required for the assigned paper.

The heading style recommended by APA consists of possible formatting arrangements. Check with your instructor and/or the APA Manual section 3.02 for further guidance regarding headings.

Level 1 Heading

Method

2 spaces after a punctuation mark helps the reader.

A research paper presents the results of your investigations on a selected topic. Based on your own thoughts and the facts and ideas you have gathered from a variety of sources, a research paper is a creation that is uniquely yours. The experience of gathering, interpreting, and documenting information, developing and organizing ideas and conclusions, and communicating them clearly will prove to be an important and satisfying part of your education. Generally, the formatting of citations recommended below is based on the American Psychological Association guidelines. Your instructor may require another format. It is important to follow consistently and accurately a recommended format that is clear and concise and that has been approved by your teacher. This guide may suffice for most students' needs for most academic purposes, but for advanced research projects it is by no means a substitute for the *Publication Manual*

1 inch margin

Quotations

of the American Psychological Association Sixth Edition (2010). That handbook can be purchased in most bookstores and copies should be available in every college and municipal library. This guide and a guide similar to this one, but based on the MLA style, are available online. "Your best source of advice on all these matters is, of course, your instructor and your library professionals" (Darling, 2008, p. 98).

Quotations fewer than 40 words are incorporated into the text using quote marks. Cite the specific page of the quote.

Once your topic has been approved, gather information from authoritative sources: pertinent books, encyclopedias, and articles in magazines, journals, and newspapers.

If a quotation is 40 or more words, start a new line, using a block quotation; indent as if a new paragraph, double space, and do not use quotation marks.

Librarians will be happy to show you how to use the various research tools within the library and may suggest other sources of information. Important new resources are now available to you through electronic services which provide many learning and reference tools as well as access to the Internet, where you can often discover an abundance of information. Depending on the resources available and the length of your assignment, you may find it necessary to widen or restrict the scope of your topic (Darling, 2008, pp. 96-97).

Level 1 Heading

Discussion

If you are instructed by your professor to use headings, refer to section 3.02 of the Publication Manual of the APA.

Using someone else's ideas or phrasing and representing those ideas as your own, either on purpose or through carelessness, is a serious offense known as plagiarism. Ideas or phrasing includes written or spoken material, from whole papers and paragraphs to sentences, and, indeed, phrases but it also includes statistics, lab results, art work, etc. Someone else can mean a professional source, such as a published

Citing references in text

Options 1, 2, and 3 are all acceptable formats for pointing to the source listed on the reference page.

writer or critic in a book, magazine, encyclopedia, journal or in an electronic resource such as material you discover on the Internet; another student at your school or anywhere else; or a paper-writing service which offers to sell written papers for a fee.

Option #1

Newton (2011) found that he penalty for plagiarism is usually determined by the instructor teaching the course; in many schools and colleges, it could involve failure for the paper and it could mean failure for the entire course and even expulsion from school. At the very least, however, students who plagiarize have cheated themselves out of the experience of being responsible members of the academic community and have cheated their classmates by pretending to contribute something original which is, in fact, a cheap copy (Newton, 2011).

Option #2

or
(Newton, 2011, Chapter 3)
or
(Newton, 2011, p. 11)

Summary and Concluding Discussion

One-inch margins at the top, bottom, right and left sides are now required by A

Double spacing is required throughout the paper. In 2011 Newton stated that if you wish to use single spacing for quotations of verse and dram~~a because it~~ more nearly approximates what the poet would want, you must consult with your instructor before doing so.

Option #3

Each page is numbered consecutively including title page and reference page. Type the numbers in the upper right-hand corner using Arabic numerals. Arrange the manuscript as follows: title page, abstract, body of the paper, and reference page. A short title is used throughout the paper. R. Newton (personal communication, July 20, 2012) states that the short title is a two or three word derivation of the title of the paper. If the title of your paper were *Understanding Patterns of Byzantine Intrigue*, the short title could be *Byzantine Intrigue* (R. Newton, personal communication, July 20, 2012).

Personal communication, option #1

Personal communication, option #2

Do not include references to personal communications, such as letters, emails, interviews, telephone conversations on the reference page as they are not recoverable. You may however cite them in-text. What you cite should have scholarly relevance.

APA Style

Arrange entries in alphabetical order by the author's last name, or if no author, by the 1st word in the citation.

Include page number in upper right corner

Use Times New Roman 12 point font.

References

Darling, C. (2008). *Saints of diminished capacity.* New York: Random House.

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Language (2009). In *Columbia electronic encyclopedia.* Retrieved September 18, 2012, from http://www.informationplease.com

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South, S., Oltmanns, T., & Turkheimer, E. (2009). Interpersonal communication across peer groups. *Journal of Communication, 73,* (2) 675-692. doi: 10.1111/j.1467-6494.2005.00325

Online journal article with DOI.

Include the DOI (digital object identifier) in your citation whenever it is

Capitalize only the first word of a journal article title and subtitle. Do not italicize.

South, S.,Oltmanns, T., & Turkheimer, E. (2009). Interpersonal communication across peer groups. *Journal of Communication, 73,* (2) 675-692. Retrieved from http://search.ebscohost.com

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Wheatcroft, G. (2008, June). The challenge of education. *The Atlantic, 293*(3), 56–72.

Print journal article. Full title italicized in upper and lowercase letters. *Italicize the volume number* but not the issue and page numbers.

The reference page provides the information necessary for a reader to locate and retrieve any source you cite. Each source you cite in the paper must appear in your reference list.