7th Science Fair Project
Overview

Name: _____________________________________________

Science Teacher: ___________________________________
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Important 7th Grade Science Fair Dates

Sept. 8-10 Choosing a Topic - Exploration of Science Genres in Library*
Sept. 23-26 Research Chosen Topic – Library*
Sept. 26 Concept Map of Completed/Planned Research Due
Sept. 29, 1-3 Complete Research – Library*
Oct. 10 Research Note Cards Due
Oct. 24 Purpose and Hypothesis – Final Drafts Due
Nov. 3 Materials and Methods of Procedure – Best Rough Draft Due
Safety Sheets and Endorsements – Final Drafts Due
Dec. 17 Raw Data from Experiment Due in Journal
Jan. 5-9 Formal Data Tables, Graphs, Data Analysis – Computer Lab*
Jan 12-15 Write Results and Conclusions – Computer Lab *
Jan. 20 Science Fair Project Display Board Due
Jan 23 All 7th Grade Science Fair – During School Day, Parents Invited!
Jan. 29 Lighted School House & Evening All School Science Fair
80 7th and 8th Grade Projects Presented (Judging During the School Day
for Regional Science Fair Qualification)
Feb. 4 Announcement of Students Qualifying to Participate in the Regional
Science Fair Competition
March 14** Regional Science Fair Competition (For Students Who Qualify)
May 8-9** State Science Fair Competition (For Students Who Qualify)

** Parents are responsible for transportation/lodging and chaperoning students at
these events.
Lincolnwood School District #74
Goals of Science Fair

Each student in 7th and 8th grade will participate in the Science Fair by:

- writing a research paper on the topic of his/her choice
- designing and conducting an experiment to test a question of his/her choice
- presenting all information from the process using a display board format
- explaining all information in an oral presentation (7th grade informally; 8th grade formally)

District 74 Science Fair Goals*:

Each student in 7th and 8th grade will be provided with the opportunity to practice scientific inquiry on a topic of his/her choice and will be able to work at his/her ability level. Each student will:

- research historic and current foundations for the topic/question of choice
- formulate hypotheses that can be tested by collecting data
- formulate an if-then, cause-effect statement of the hypothesis.
- design and conduct a scientific investigation that controls all but one variable
- incorporate appropriate safety precautions into experimental design
- repeat the experiment with sufficient trials to draw valid conclusions
- collect data accurately, using consistent measuring techniques and using appropriate metric units
- organize data accurately and graph data appropriately
- interpret and represent results of analysis to produce findings
- explain the existence of unexpected results in a data set
- decide which observations support the hypothesis and which observations refute it
- generate additional questions for further investigations
- report the process and results of the investigation in visual and oral presentations

The Science Fair Project experience will provide students with opportunities to pose questions, make predictions, gather and work with data, use appropriate measurement methods, analyze results, draw conclusions based on evidence, communicate their methods and results, and share implications of scientific inquiry. Scientific inquiry requires many skills and complex thought processes, we believe that students benefit when they have multiple experiences as both 7th and 8th graders. We are very proud to provide these learning experiences for our students.

* Adapted from Illinois State Board of Education’s Illinois Learning Standards for Science
As a result of participation in scientific investigation and the science exposition, students fulfill several of the Illinois State Goals and Learning Standards. These include:

- **State Goal 3 (English/Language Arts):** To write to communicate for a variety of purposes.
- **State Goal 4 (English/Language Arts):** To listen and speak effectively in a variety of situations.
- **State Goal 5 (English/Language Arts):** To use the language arts to acquire, assess and communicate information.
- **State Goal 7 (Mathematics):** Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.
- **State Goal 8 (Mathematics):** To use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.
- **State Goal 10 (Mathematics):** To collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.
- **State Goal 11 (Science):** To understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
- **State Goal 12 (Science):** To understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
- **State Goal 13 (Science):** To understand the relationships among science, technology and society in historical and contemporary contexts.
That is a great question! You may think that a science fair project is something teachers dreamed up so that you could learn how to manage a large, long-term project. Actually, scientists in the real world complete science fair projects. They call them “posters” and share them at “poster sessions.”

When a scientist has a question about the world around us, he/she investigates what others have already learned about the topic. Then, if that particular question has not been answered before, the scientist conducts a test of the question, called an experiment. During the experiment, the scientist collects observations and measurements and uses these data to try to answer the question. Charts and graphs help the scientist make sense of the data. Finally, the scientist shares the data and conclusions about the question with other scientists, sometimes at a meeting called a poster session. Scientists present all of the steps in their process of trying to answer their question on a poster, and they discuss their findings and answer questions from other scientists about their work. They do this in order to collaborate, share information, and further human knowledge. Wow! And this is what you get to do with your science fair project!

So, you too can be a real scientist this year and make discoveries to share with others! The exciting part of this project is that you get to choose the topic and question you will test with an experiment. What observations have you made about the world around you and what questions do you have to test?

Your science fair project provides you with the opportunity to practice scientific inquiry on a topic of your choice. You are strongly encouraged to choose a question for investigation that interests you and that is well matched to your abilities. Your teachers will help you with possible choices and guidance. Once you have chosen a topic and question for investigation, you will then proceed through the steps of the scientific method, which is one type of scientific inquiry.
Parts of a Science Fair Project

Research: You will conduct research on your chosen topic and question in the library during science class. Armed with the knowledge gained from the research phase, you will then write a research paper called a review of literature in your language arts class. This research paper is an explanation of what scientists before you have learned about your topic.

Purpose: You will write a statement that explains what you want to discover with your science fair project.

Hypothesis: Using your background research, you will write a proposed answer to your question in the form of an if-then, cause-effect statement. The hypothesis is the statement that your experimental results will support or not support.

Safety Sheets: As you plan your experiment, you will fill out sheets explaining how you plan to keep yourself, and any others present during your experiment, safe. You also need to explain how you will ensure the safety of any people or animals participating in your experiment.

*****You may NOT begin your experiment until you have approved safety sheets***** signed by your science teacher!

Experiment: You will use your background knowledge to design an experiment that changes one thing, or variable, and keeps all other things the same. You will plan and carefully record the steps you will take to complete the experiment. You will measure and record observations during the experiment and possibly take pictures of your experiment. You will also need to keep track of all materials you use and make note of how much you use of each item.

Results: You will collect data, or results, as you conduct your experiment. You will describe the results in words and numbers. You will then organize your results, or data, in tables and graphs. Finally, you will explain your results in a written narrative.

Conclusions: You will answer the question you posed at the beginning of the project. You will explain whether your experimental results support or do not support your hypothesis.

The Presentation: When you are done with your research, experiment, and analysis of your data, and when you have a conclusion about your hypothesis, then you will construct a display board with all of this information. This display board will help you share your findings with your fellow scientists on the day of the science fair. You are expected to complete your display on time so that it may be shared with others on that day. 7th graders will explain their findings to fellow students and parents at the science fair. 8th graders will give a more formal 5 minute speech to their class about their work and findings.
All paper should be attached to colored paper before being attached to the display board. Do NOT write directly on the board. Attach paper!
Appendix

Reference Material and Forms
Students must design an experiment to investigate a question or problem. A project based solely on library research is not an acceptable project. The following guidelines should give you an indication of what type of experimentation can be done within each category and help to place a given project in the proper category for judging. **NOTE THAT A MODEL OR DEMONSTRATION IS NOT AN ACCEPTABLE PROJECT.**

**AEROSPACE SCIENCE**... is the science of the study and investigation of the earth’s atmosphere and outer space. In the wide sense, it would include the design, manufacture, and operation of aircraft. Some topics that fall within this division are the operation of rockets, guided missiles, anything related to space travel, operation, and/or construction of satellites, observations of airflow patterns within tunnels, and the use of navigational equipment.

**ASTRONOMY**... is the science dealing with all of the celestial bodies in the universe, including the planets and their satellites, comets and meteors, the stars and interstellar matter, the star systems known as galaxies, and clusters of galaxies. Modern astronomy is divided into several branches: astrometry, the observational study of the position and motions of these bodies; celestial mechanics, the mathematical study of their chemical composition and physical condition from spectrum analysis and the laws of physics; and cosmology, the study of the universe as a whole.

**BEHAVIORAL SCIENCE**... is the science that studies the demeanor or deportment of humans and other animals by means of observable response and the interpretation of the same as offered by the social sciences, sociology, psychology, etc. Some topics that fall within this division are the effect of stimuli on organisms and their responses, learning, motivation, emotion, perception, thinking, individuality, personality, and adjustment.

**BIOCHEMISTRY**... is the branch of chemistry relating to the processes and physical properties of living organisms. Topics that fall within the biochemistry division are the properties and reaction of carbohydrates, lipids, proteins, enzymes, blood, urine, vitamins, hormones, poisons, and drugs. The chemistry of absorption, digestion, metabolism, respiration, and photosynthesis as organic processes also belong in this category.

**BOTANY**... is the division of biology that deals with plant structure, reproduction, physiology, growth, classification, and disease. Some topics included in this category are specialization in plants, functions of various plant structures, reproduction, and heredity.

**CHEMISTRY**... is the science that deals with the structure, composition, and properties of substances and of their transformations. Some topics included in this category are the composition of various compounds, the formulation of various compounds, the study of gas laws, atomic theory, ionization theory, and the analysis of organic and inorganic products.

**COMPUTER SCIENCE**... includes the study and development of computer hardware, software engineering, Internet networking and communications, graphics (including human interface), simulations/virtual reality or computational science (including data structures, encryption, coding, and information theory). Topics in this category may include writing an original...
program and comparing it to an existing one, developing a new language and comparing it to an existing one, etc.

**CONSUMER SCIENCE**... is the study of comparisons and evaluations of manufactured or commercial products. Topics included in this category are taste tests, color preferences, quality control, and product efficiency.

**EARTH SCIENCE**... is the science concerned with the origin, structure, composition and other physical features of the earth. Some topics that fall within this division are geology (earth composition, rock formation, fossils, minerals, and fossil fuel); geography (landforms, soils, classification of streams, erosion, and sedimentation); oceanography (ocean waves, ocean currents, composition of ocean water and coastal zone management); seismology; geophysics; and meteorology.

**ELECTRONICS**... is the branch of engineering and technology that deals with the manufacture of devices such as radios, television sets, and computers that contain electron tubes, transistors, chips, or related components. Topics in this category are circuits (electrical, electric digital and analog) for communication such as radio, radar, laser, transistor, television, and integrated circuits; electricity; electric motors; solar cells and amplifiers.

**ENGINEERING**... is concerned with the practical application of scientific knowledge in the design, construction, and operation of roads, bridges, harbors, buildings, and machinery, lighting, heating, and communication systems. Some topics in this category are stress testing of building materials, strength composition of building materials, and collection of data from operating systems to compare and contrast their effectiveness.

**ENVIRONMENTAL SCIENCE**... is the study of the protection and care of natural resources. Topics included in this category are solar energy and its uses, water purification and usage, pollution control, soil chemistry, and insecticides. Within this area is ecology, which is the study of ecological systems, and ecological population studies.

**HEALTH SCIENCE**... is that science concerned with the study of the human body and good health practices. Topics to be found under this category are proper diet, care of the teeth, care of the eyes, and hygiene.

**MATERIALS SCIENCE**... is the study of materials, nonmetallic as well as metallic, and, how they can be adapted and fabricated to meet the needs of modern technology. Using the laboratory techniques and research tools of physics, chemistry, and metallurgy, science is finding new ways of using plastics, ceramics, and other nonmetals in applications formerly reserved for metals.

**MATHEMATICS**... is the science dealing with the measurement, properties, and relationships of quantities as expressed in numbers or symbols whether in the abstract or in their practical connections. Some topics included under mathematics are arithmetic (use of numbers, symbols, and numerical systems); algebra (probability, theory of equations, progressions, permutations and combinations); geometry (topology, study of geometric figures, similar figures, and scale drawings); calculus; trigonometry, statistics and graphing.
MICROBIOLOGY*... is the branch of biology concerned with the study of microorganisms. Topics to be found in this category are the structure and physiology of bacteria, viruses, yeasts, fungi, and protozoa, and studies involving cells or tissues in cultures.

PHYSICS... is the science that deals with the laws governing motion, matter, and energy under conditions susceptible to precise observation as distinct from chemistry or sciences dealing with living matter. Topics found in the category of physics are hydrostatic force and pressure, gravity, Newton's Laws, relativity, kinetic theory, motion forces, work, energy, sound, light, and magnetism.

ZOOLOGY*... is the science that deals with animals with reference to their structure, functions, development, evolution, and classification. Some topics that fall within this category are structural and functional studies of vertebrates and invertebrates, physiology, reproduction, heredity, and embryology.

* PROJECTS IN THESE CATEGORIES MAY NEED ENDORSEMENT(S)

Science Fair Experiment Possibilities

Plants
1. When placed in potting soil, will multiple pieces of a potato produce more plants than a whole potato?
2. Do the number of leaves on a plant affect how well it grows?
3. Does the color of light a plant is grown in affect how well it grows?
4. Does caffeine affect plant growth?
5. What plants are the most flammable?
6. Can plants grow without any soil, such as in sand or pure water?
7. Does sugar prolong the life of cut flowers?
8. Do plants grow better in continuous light, or alternating light and dark periods?
9. Does pollution affect how well plants can grow?

Crystals
1. How do you prevent ice crystals from forming on ice cream?
2. Which grows faster or larger, salt crystals or sugar crystals?
3. How does temperature affect crystal growth?
4. Can crystals be grown in vinegar instead of water? What difference does it make to their shape?
5. What effect do additives (food coloring, iodized salt, etc) have on crystal growth?

Fungus
1. What type of fruit does mold grow on the best?
2. What type of bread does mold grow on the best?
3. Are there any substances that can help prevent the growth of mold on bread?
4. Does moisture affect mold growth?
5. Does temperature affect mold growth (does refrigerating bread help preserve it)?
6. Does the amount of light affect mold growth?
The Brain/Humans
1. What is an afterimage and how do they work? What colors can you see?
2. What is the stroop effect and does it really affect people’s ability to read?
3. Does talking on your cell phone affect reaction time?
4. Which type of distractions interfere with a person’s ability to remember something?
5. What sorts of things (being blinded, hands tied, etc) affect somebody’s balance?
6. What effect does touching an object have on someone’s ability to remember it?
7. Does amount of sleep affect learning?
8. Does music affect learning?
9. Which can boys and girls remember better, pictures or words?
10. Does either age or gender affect lung capacity?
11. What sorts of activities affect somebody’s pulse rate, and by how much?
12. What parts of the body are least sensitive to touch?
13. Is using two eyes to judge distance more accurate than using one?
14. How accurately can people judge temperature?

Physics
1. How does the shape of a parachute affect how long it will stay in the air?
2. Can the design of a paper airplane make it fly farther?
3. What designs of boats can support the most weight?
4. What designs can keep a rocket in the air the longest?
5. Does the height at which you drop a ball affect the way it bounces?
6. What materials are attracted to magnets, and how strongly are they attracted?
7. What designs of bridges are the strongest?
8. Does sound travel best through gas, liquids, or solids?
9. Are compact florescent light bulbs actually more energy efficient than incandescent?
10. What materials or colors reflect or retain heat the best?
11. Will a rollercoaster go faster down a straight ramp or a curved ramp?
12. Once a rollercoaster car goes down a first ramp, how high can a second ramp be in comparison?

Chemistry
1. How does temperature affect the stretch of a rubber band?
2. Does warm water freeze faster than cold water?
3. Does an ice cube melt faster in air or water?
4. What liquid causes the most tooth decay?
5. Does boiling water stop boiling when ice is added to it?
6. Does the SPF of a sunscreen really matter?
7. Can you make a liquid float, if so, what liquids float on other liquids?
8. Can you force an egg into a bottle without touching it?
9. What happens when an acid is combined with a base, and why?
10. Why do Mentos and Coke cause an eruption, and what other mixtures can have similar effects?
11. What liquids clean pennies the best?
12. Does adding salt to water help it boil quicker? Make pasta cook faster?
13. Does temperature affect how well popcorn pops? (pop from freezer, fridge, etc.)
14. Which brand of diaper holds the most water?
15. Does food cool off quicker when heated by oven or microwave?
## The Illinois Junior Academy of Science

### Project Checklist

- **Abstract** (Regional and State Competition only)
  - First page of paper.
  - 3 paragraphs with proper headings: Purpose, Procedure, and Conclusion.
  - Typed single-spaced.
  - 200 words or less.

- **Safety Sheet**
  - Second page of paper. (Paper for Regional and State Competition only)
  - Hazards listed, precautions described.
  - Signed by sponsor.

- **Endorsement(s), if applicable:**
  - Third page of paper; subsequent pages, as needed. (Paper for Regional and State Competition only)
  - Signed by student and sponsor; proper documentation is attached, if necessary.

- **Title Page** (Regional and State Competition only)
  - Clear and concise.

- **Table of Contents** (Regional and State Competition only)
  - Pagination is accurate.

- **Acknowledgments** (Regional and State Competition only)
  - Credit is given to those who have helped.

- **Purpose and Hypothesis**
  - States precisely what the investigation was attempting to discover.
  - States a definite question or problem.
  - Hypothesis is present.

- **Review of the Literature**
  - Use of 3rd person is evident.
  - Logical and/or related grouping of information.
  - Accuracy in calculations, spelling, grammar, and quotations.
  - Typed double-spaced, one-inch margins, single-sided.
  - Parenthetically cited.
Results
_______ Data is organized into tables or charts with accompanying graphs, if appropriate.
_______ Data is quantitative and correct units of measurement (metric) are used.
_______ Data is clear and accurate.
_______ The effect of experimental error was estimated and considered.

Conclusions
_______ Evaluation and interpretation of data is present.
_______ Refers back to purpose and hypothesis; answers the original question.
_______ Is valid and limited to the results of the experiment.

Reference List
_______ References come from a variety of sources.
_______ References are current.
_______ Reference list is alphabetical.
_______ Proper format is used for all references.

If experimenting with humans, the following procedures were followed:
_______ No cultures were obtained from humans, except those from supply houses.
_______ Quantities of food and non-alcoholic beverages were limited to normal serving sizes, and consumed in a reasonable amount of time.
_______ Blood was not drawn exclusively for the science project.
_______ Projects involving exercise have a valid normal physical examination on file and exercise was not carried to the extreme.

If experimenting with a non-human vertebrate the following procedures were followed:
_______ No cultures were obtained from warm-blooded animals.
_______ No intrusive techniques were used.
_______ No extreme changes were made in the organism's normal environment.
_______ Food or water was not withheld for a period that would cause undue stress based on the animal's metabolic rate.
_______ Animals were properly cared for with adequate ventilation, food, and water.
_______ Chicken or other bird embryo treatment was discontinued at or before 96 hours from fertilization.
Exhibition Safety

______ Project fits on tabletop within 76 X 122 cm limitations allowed; is no taller than 152 cm (5 ft).
______ No glass object may be displayed unless it is a component of some unique apparatus. The apparatus must be secured, without sharp edges, and away from the table’s edge.
______ Chemicals are not displayed. Photographs should be substituted.
______ Hazardous materials: explosive, flammable, corrosive, or poisonous materials, rockets, compressed or aerosol cans are not displayed.
______ Fire hazards: no open flames, torches, burners, or electric hotplates are displayed.
______ Radiation: no laser, UV-light, X-rays, or other radioactive materials are displayed.
______ Packing materials are not on or under the table.
______ No table drapes or other coverings are present.
______ No vertebrates, invertebrates, or animal tissues are displayed.
______ No hypodermic needles or syringes are displayed.
______ No cultures of any kind are displayed.
______ Electrical and/or mechanical equipment is (are) shielded, durable, enclosed, insulated, and quiet.

Miscellaneous

______ Three copies of the complete research paper for Project Session participants.
______ Display board - Reminder: no chairs or table covers are allowed.
______ Entry Tag Ribbon
______ A copy of the Abstract, Safety Sheet, and Endorsements (if applicable) are displayed on the front of the display board.
______ Electrical extension cord, if needed for your project. The project has already been designated as needing electricity.
______ Friday night banquet tickets - see sponsor for information
The correct style to use for citing references in the Reference List section is discussed in detail in the Publication Manual of the American Psychological Association, Fifth Edition, 2001, or later (APA style). Be careful to follow the punctuation, indentation, and format shown below.

- The Reference List must be double-spaced.  
  Note: If using the actual APA Publication Manual, all example references are single-spaced to save space in the Publication Manual.
- The Reference List should be alphabetized according to the first letter of each entry.
- Entries should be formatted using a hanging indent. Entries should begin flush left and the second and all subsequent lines should be indented.
- Italics are preferred over the use of underlining.
- The abbreviation for Page(s), p. or pp., is not used except in references to newspapers.
- Electronic source references must provide the date the information was retrieved, and also the name and/or address of the source.

**BOOKS**

**Format:** The author’s last name is listed first. The author’s name is followed by the date of publication, in parentheses, ending with a period. Next include the book title, which is in italics. Capitalize only the first word of the title (and the first word of the subtitle, if any) and any proper names. Close with a final period. End with publication information. Identify the city and, if the city is not well known or could be confused with another city, include the state where the publisher is located. Place a colon (:) after the city name. Then identify the name of the publisher, clearly and briefly. Spell out the names of associations and university presses, but omit superfluous terms such as “Publishers,” “Co.,” or “Inc.” If two or more locations are given, give the location listed first or the publisher’s home office. Close with a period.

**Book - One author:**


**Book - Multiple authors:**

When a work has between two and six authors, cite all authors. When a work has more than six authors cite the first six authors followed by “et al.” to indicate the remaining authors.


**Book - Corporate author:**

Book - Edited volume:


Book - No author:

Book - Work in an anthology:

JOURNALS-MAGAZINES-NEWSPAPERS

Articles in journals or magazines with continuous pagination:


Articles in journals or magazines with non-continuous pagination:
Because pagination begins anew with each issue of the journal, it is necessary to include the issue number in italics followed by the volume number in parentheses, if applicable. Note that there is a comma between the issue number and the page numbers, but no comma between the italicized volume number and the issue number.


Daily Newspaper article:
Daily Newspaper article (no author):


Articles in weekly periodicals:


Articles in monthly periodicals:


OTHER SOURCES

Encyclopedia:


Entry in an Encyclopedia:


Encyclopedia article, CD-ROM:

Basic form


Example with author


Example without author


Film or videotape:

Interviews – Published:


Interviews- Unpublished:
Unpublished interviews do not need a reference page entry because they are what the Publication Manual of the APA calls “personal communications” and so “do not provide recoverable data.”


Recording:


ELECTRONIC SOURCES

Electronic formats can be found at: http://www.apa.org/science/pubs.html

World Wide Web, Home page/Secondary page:

Basic form

Author/editor (if known). (Revision or copyright date, if available). Title of page. Publication, Page number(s).

Retrieved Date, from Protocol: Site/Path/File

Example


http://www.cocacola.com/co/chairman.html

Periodical – Electronic:

Basic form


month day, year, from source.

Journal article - Electronic:

Basic form

Author. (Date). Title. Journal Title, volume, paging. Retrieved Date, from URL
Example


Magazine article - Electronic:
Basic form

Author. (Date). Title. Magazine Title, volume (if given), paging. Retrieved Date, from URL Protocol: Site/Path/File

Example

telnet://melvyl.ucop.edu

Daily Newspaper article – Electronic:
Basic form

Author. (Date). Title. Newspaper Title. Retrieved Date, from URL Protocol: Site/Path/File

Example


Newsgroup article – Electronic:
Basic form

If the author’s name is available list it last name first. If only a screen name is available, use the screen name. Provide the exact date of posting. Follow the date with the subject line of the message. Do not italicize it. Provide any identifier for the message in brackets after the title. Finish the reference with Message posted to followed by the address of the newsgroup. Note that the protocol is news.

Author (if given). (Date). Subject line of message. Message posted to news:// Protocol:Topic.Subtopic(s)

Example

Personal communication - Electronic:
Basic form

Communicator (personal communication, Date)

Example

Omar, B. W. (personal communication, June 5, 2005)

APA RESOURCE WEBSITES

These materials will introduce you to APA documentation, step-by-step instructions, Format, Citations, and Reference Lists. However, it is suggested you reference the *Publication Manual of the American Psychological Association, Fifth Edition, 2001, or later*, whenever possible.


http://www.apastyle.org/elecsource.html


http://www.stylewizard.com

http://www.noodletools.com

http://www.easybib.com

http://www.rapidcite.com

http://www.citationmachine.net

http://www.english.uiuc.edu/CWS/wORKSHOP/writer_resources/citation_styles/apa/apa.htm

#internet
NOTE: ALL REFERENCES CITED WITHIN THE TEXT MUST APPEAR IN THE REFERENCE LIST, AND ALL ENTRIES IN THE REFERENCE LIST MUST BE CITED IN THE TEXT.

DIRECT QUOTATIONS OF SOURCES

Quotations of less than 40 words should be incorporated in the text and enclosed with double quotation marks. Using the "author-date method" of citation, the quotation is followed with a reference to the author, the publication year, and the page number. These elements must be enclosed in parentheses, together or separately. A complete reference must appear in the reference list at the end of your paper.

He stated, "The 'placebo effect,'...disappeared when behaviors were studied in this manner" (Smith, 2001, p.276), but he did not clarify which behaviors were studied.

Smith (2001) found that "the 'placebo effect,' which had been verified in previous studies, disappeared when [his own and others'] behaviors were studied in this manner" (p. 276).

If quoting from an Internet source or CD-ROM, use the same format as for other quotations, but use [Online] or [CD-ROM] in place of a page number reference.

He stated, "The 'placebo effect,'...disappeared when behaviors were studied in this manner" (Smith, 2001, [Online]), but he did not clarify which behaviors were studied.

When making a quotation of more than 40 words, use a free-standing "block quotation" on a new line; indent five to seven spaces and omit quotation marks.

Smith (2001) found the following:

The "placebo effect," which had been verified in previous studies, disappeared when behaviors were studied in this manner. Furthermore, the behaviors, were never exhibited[italics added], even when real [sic] drugs were administered. Earlier studies were clearly premature in attributing the results to a placebo effect (p. 276).

REFERENCE CITATIONS IN THE TEXT

Whenever using your own words to refer indirectly to another author's work (paraphrasing), you must identify the original source. The "author-date method" of citation is used for this purpose, but without quotations marks. A complete reference must appear in the reference list at the end of your paper.

EXAMPLES

One Work by a Single Author:
The surname of the author and the year of publication are inserted in the text at the appropriate point. If this information appears as part of the narrative, it need not be cited again:

Smith (2001) compared reaction times...
Within a paragraph, you need not include the year in subsequent references to a study as long as the study cannot be confused with other studies in the article:

Smith (2001) compared reaction times....Smith also found.

One Work by Two Authors:
When a work has two authors, cite both names every time the reference occurs in the text:

-as James and Ryerson (2002) demonstrated...

-as has been shown (James and Ryerson, 2002)...

One Work by Two to Six Authors:
When a work has more than two and fewer than six authors, cite all authors the first time; in subsequent citations include only the surname of the first author followed by "et al." and the year:

Williams, Jones, Smith, Bradner, and Torrington (2004) found...

Williams et al. (2004) found... (subsequent citations)

Corporate Author:
When the reference is to a work by a corporate author, use the name of the organization as the author.

Retired officers retain access to all of the university’s education and recreational facilities (Columbia University, 2002). They have been...

Unknown or Unspecified Author:
If the author is unknown or unspecified, use the first few words of the reference list entry (usually the title).

Misbehaviors were found to reduce to three factors; incompetence, offensiveness, and indolence (The Study Finds, 2003). In the....
ABSTRACT

The Illinois Junior Academy of Science

CATEGORY _________________________________ STATE REGION # ______
SCHOOL _____________________________ IJAS SCHOOL # ________
CITY/ZIP ______________________________ SCHOOL PHONE _______
SPONSOR ____________________________

NAME OF EXHIBITOR* __________________ GRADE ____________
NAME OF EXHIBITOR __________________ GRADE ____________
NAME OF EXHIBITOR __________________ GRADE ____________
NAME OF EXHIBITOR __________________ GRADE ____________

* If this project is awarded a monetary prize, the check will be written in this exhibitor’s name, and it will be his/her responsibility to distribute the prize money equally among all participating exhibitors.

PROJECT TITLE

____________________________________________________________
________________________________________________________

1. Limit Abstract to 3 paragraphs (about 200 words or less). a) Purpose - what you set out to investigate; b) Procedure - how you did it; (c) Conclusion - based on your results. LABEL EACH PARAGRAPH.
2. Must be typed, single-spaced on the front of this form. DO NOT write on the back of this form.
16. THREE (3) copies of your COMPLETE paper are required at the State Science Project Exposition.
4. FOUR (4) copies of your COMPLETE paper are required for the State Paper Session Competition.

The above form must be duplicated. Student generated forms must be in essentially the same format.

This form MUST be displayed on the front of the exhibitor’s display board. It may be reduced to half a sheet of paper.
SAFETY SHEET
The Illinois Junior Academy of Science

DIRECTIONS: The student is asked to read this introduction carefully, fill out the bottom of this sheet, and sign it. The science teacher and/or advisor must sign in the indicated space.

SAFETY AND THE STUDENT: Experimentation or research may involve an element of risk or injury to the student, test subjects and to others. Recognition of such hazards and provision for adequate control measures are joint responsibilities of the student and the sponsor. Some of the more common risks encountered in research are those of electrical shock, infection from pathogenic organisms, uncontrolled reactions of incompatible chemicals, eye injury from materials or procedures, and fire in apparatus or work area. Countering these hazards and others with suitable controls is an integral part of good scientific research.

In the box below, list the principal hazards associated with your project, if any, and what specific precautions you have used as safeguards. Be sure to read the entire section in the Policy and Procedure Manual of the Illinois Junior Academy of Science entitled "SAFETY GUIDELINES FOR EXPERIMENTATION" before completing this form.

SIGNED __________________________________________________________________________
Student Exhibitor(s)

SIGNED __________________________________________________________________________
Sponsor*

*As a sponsor, I assume all responsibilities related to this project.

This Sheet Must Be Typed

This form MUST be displayed on the front of the exhibitor’s display board. It may be reduced to half a sheet of paper.
HUMANS AS TEST SUBJECTS ENDORSEMENT
The Illinois Junior Academy of Science

THESE RULES WILL BE STRICTLY ENFORCED FOR THE STATE SCIENCE EXPOSITION. NO REGION SHOULD SEND A PROJECT TO THE STATE EXPOSITION THAT DOES NOT MEET THESE REGULATIONS.

Students and sponsors doing a non-human vertebrate project must complete this form. The signature of the student or students and the sponsor indicates that the project was done within these rules and regulations. Failure to comply with these rules will mean the disqualification of the project at the state level. This form must follow the Safety Sheet in the project paper.

1. The student and the sponsor have the responsibility to see that all animals have proper care in well-ventilated, properly lighted locations with proper nutrition, proper temperature, adequate water, and sanitary surroundings. Care must be taken to see that the organisms are properly cared for during weekends and vacation periods.
2. No primary or secondary cultures involving warm-blooded animals taken directly (mouth, throat, skin, etc.) or indirectly (cage debris, droppings, etc.) will be allowed. However, cultures purchased from reputable biological supply houses or research facilities are suitable for student use.
3. No intrusive or pain-producing techniques may be used. Included in these techniques would be things such as surgery, injections, taking of blood, burning, electrical stimulation or giving of over-the-counter, prescription, illegal drugs, or alcohol to measure their effect.
4. No changes may be made in an organism’s environment that could result in undue stress, an injury, or death to the animal.
5. No vertebrates can be used as the independent or dependent variables in an experiment that could result in undue stress, an injury, or death to the animal.
6. For maze running and other learning or conditioning activities, food or water cannot be withheld for more than 24 hours. If the animal has a high metabolic rate, then food or water cannot be withheld for a length of time that would produce undue stress on the animal.
7. Chicken or other bird embryo projects are allowed, but the treatment must be discontinued at or before ninety-six hours from fertilization.
8. Projects that involve behavioral studies of newly hatched chickens or other birds will be allowed if no changes have been made in the normal incubation and hatching of the organism, and that all vertebrate rules are followed.

In this space, briefly describe the use of non-human vertebrates and assess the risk(s) to them in your project. Use the back of this page if necessary.

The signatures of the student, or students, and sponsor below indicate that the project conforms to the above rules of the Illinois Junior Academy of Science.

____________________________________  ____________________________________
(Sponsor)                                      (Student)
__________________________________________  _________________________________
(Date)                                         (Student)

This Sheet Must Be Typed
NON-HUMAN VERTEBRATE ENDORSEMENT

The Illinois Junior Academy of Science

THESE RULES WILL BE STRICTLY ENFORCED FOR THE STATE SCIENCE EXPOSITION. NO REGION SHOULD SEND A PROJECT TO THE STATE EXPOSITION THAT DOES NOT MEET THESE REGULATIONS.

Students and sponsors doing a non-human vertebrate project must complete this form. The signature of the student or students and the sponsor indicates that the project was done within these rules and regulations. Failure to comply with these rules will mean the disqualification of the project at the state level. This form must follow the Safety Sheet in the project paper.

1. The student and the sponsor have the responsibility to see that all animals have proper care in well-ventilated, properly lighted locations with proper nutrition, proper temperature, adequate water, and sanitary surroundings. Care must be taken to see that the organisms are properly cared for during weekends and vacation periods.
2. No primary or secondary cultures involving warm-blooded animals taken directly (mouth, throat, skin, etc.) or indirectly (cage debris, droppings, etc.) will be allowed. However, cultures purchased from reputable biological supply houses or research facilities are suitable for student use.
3. No intrusive or pain-producing techniques may be used. Included in these techniques would be things such as surgery, injections, taking of blood, burning, electrical stimulation or giving of over-the-counter, prescription, illegal drugs, or alcohol to measure their effect.
4. No changes may be made in an organism’s environment that could result in undue stress, an injury, or death to the animal.
5. No vertebrates can be used as the independent or dependent variables in an experiment that could result in undue stress, an injury, or death to the animal.
6. For maze running and other learning or conditioning activities, food or water cannot be withheld for more than 24 hours. If the animal has a high metabolic rate, then food or water cannot be withheld for a length of time that would produce undue stress on the animal.
7. Chicken or other bird embryo projects are allowed, but the treatment must be discontinued at or before ninety-six hours from fertilization.
8. Projects that involve behavioral studies of newly hatched chickens or other birds will be allowed if no changes have been made in the normal incubation and hatching of the organism, and that all vertebrate rules are followed.

In this space, briefly describe the use of non-human vertebrates and assess the risk(s) to them in your project. Use the back of this page if necessary.

The signatures of the student, or students, and sponsor below indicate that the project conforms to the above rules of the Illinois Junior Academy of Science.

________________________________________  ______________________
(Sponsor) (Student)

________________________________________  ______________________
(Date) (Student)

This Sheet Must Be Typed

This form MUST be displayed on the front of the exhibitor’s display board. It may be reduced to half a sheet of paper.
MICROORGANISM ENDORSEMENT

The Illinois Junior Academy of Science

THESE RULES WILL BE STRICTLY ENFORCED FOR THE STATE SCIENCE EXPOSITION. NO REGION SHOULD SEND A PROJECT TO THE STATE EXPOSITION THAT DOES NOT MEET THESE REGULATIONS.

Students and sponsors doing a microorganism project must complete this form. The signature of the student or students and the sponsor indicates that the project was done within these rules and regulations. Failure to comply with these rules will mean the disqualification of the project at the state level. This form must follow the Safety Sheet in the project paper.

1. This area of science may involve many dangers and hazards while experimenting. It is the sole responsibility of all teacher(s)/sponsor(s) to teach students proper safety methods and sterile techniques.
2. The Illinois Junior Academy of Science prohibits the use of primary or secondary cultures taken from humans or other vertebrate animals in any project because of the danger from unknown viruses or other disease-causing agents that may be present. Pure cultures of microorganisms known to inhabit vertebrate animals may be obtained from reputable suppliers and used in proper settings.
3. Microorganism experiments should be conducted in a laboratory.
4. Projects involving viruses and recombinant DNA should be done with the help of a professional and should comply with the National Institutes of Health (NIH) Guidelines unless the project is limited to a kit obtained from a legitimate supply house.
5. All cultures should be destroyed by methods such as autoclaving or with a suitable NaOCl (bleach) solution before disposal.

In this space, identify and briefly describe the use of microorganisms in your project. Use the back of this page if necessary.

The signatures of the student or students and sponsor below indicate that the project conforms to the above rules of the Illinois Junior Academy of Science.

__________________________________  ______________________________
(Sponsor)                                (Student)

__________________________________  ______________________________
(Date)                                    (Student)

This Sheet Must Be Typed

This form MUST be displayed on the front of the exhibitor’s display board. It may be reduced to half a sheet of paper.
ORAL PRESENTATION

In presenting your project to the judges at a science exposition, the following approaches have proven successful for many students.

a. **INTRODUCTION**
   State your name(s), age, school.

b. **ACKNOWLEDGMENTS**
   Give credit to those whom you have contacted and to those who have helped you.

   Discuss any work done in the past pertaining to your project.

c. **PURPOSE AND HYPOTHESIS**
   State exactly what the investigation is attempting to discover.

   Make a prediction about the outcome.

   How did you get interested in this project? Give the reason for choosing it.

d. **BACKGROUND INFORMATION**
   Background explanation for your project (to familiarize the judges), scope of your study, etc.

e. **PROCEDURE**
   Proceed in a logical manner, telling what you did step by step.

   Be complete. Do not leave out necessary details.

   Use visual aids: charts, pictures, graphs, etc. Point to your display, but stand aside when you do this.

   Explain how your apparatus was used. If you constructed it yourself, tell the judges you did, if not, give credit to those who helped you. Judges are more interested in your results and conclusions than in the apparatus.

   Discuss ways you avoided experimental error such as use of appropriate instrumentation and measurements, large enough sample size, and/or having controls when possible.

   Discuss statistical aspects of experimental errors such as averages, ranges, and/or other statistical analogies.

f. **RESULTS (DATA AND DISCUSSION)**
   Explain both your controls and your experimental variables.

   Remember to use proper units of measure with your data.

   Point to graphs, charts, etc., when you refer to them.
g. CONCLUSION
   State in a concise and logical order the conclusions you can validly draw from the experimentation you have done and the data and/or observation obtained.

   Discuss how you plan to continue your project, if applicable.

h. ANY QUESTIONS
   When you have finished, ask the judges if there are any questions they would like to ask.

   When they ask you questions, think before you answer them. Answer slowly! If you don't know the answer say, "I'm not sure but I think..."

   If they ask you a question that is not related to your project and you do not know the answer, then say, "I really haven't been concerned with this in my project, but it might be interesting to look into it."

   Thank the judges for any suggestions they may have for bettering your research.

i. OTHER SUGGESTIONS
   Speak slowly!

   Be forward but polite, dynamic, and above all interested in what you are doing.

   Remember that you are a salesperson and therefore your job is to sell your product to the judges. The judges are interested in your work - which is why they are judging you.

   Your presentation should not exceed 10 minutes.