


**Lake Braddock Secondary School
AP & Honors Science Summer Assignment**

SCIENCE FAIR IDEA PROPOSALS

Two (2) different ideas for your science fair project are due during the first week of school. Each idea proposal must follow a specific format outlined below.

Proposals DUE: **Thursday, September 10, 2009 / Friday, September 11, 2009**

 **Your Proposals** will include the following, and in this order only. Proposals not following this format will not be accepted.

Use Times New Roman font, size 12, 1" margins, double spaced. 

PAGE 1: Justification. (1 paragraph)

Why did you choose this topic? This explains why you decided to do this project, where you got the idea for your project. This is the “real world” connection that the science fair judges will want to hear from you.

PAGE 2 Background Information. (1 page max.)

This is the research that you did relating to your project. This presents research done to give adequate background support to the project. This should be one page in length.

PAGE 3: References/Bibliography. (1 page)

This is a list of a *minimum of two (2)* sources (i.e.: science journal articles, books, internet sites) you used to write the Background Information. Choose one style (MLA or APA) and use it consistently for citing your sources.

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GETTING STARTED: CHOOSING A TOPIC

For many students this is the most difficult part of Science Fair. Is there a hobby or interest that you have? Can you find a way to make some aspect of that hobby easier or better suited for the public? Is there a scientific phenomenon that you would like to know more about? There are many sources out there to help you choose a topic. However, don't be tempted to take a procedure from the internet or from a book you find; this is plagiarism. Those sources can be used as a guide, but be sure that your topic is original or find a new innovative way to test a topic that may have been tested before. The table below presents some topics to avoid and why.

Topic to Avoid	Why
Any topic that boils down to a simple preference or taste comparison. For example, "Which tastes better: Coke or Pepsi?"	Such experiments don't involve the kinds of numerical measurements we want in a science fair project. They are more of a survey than an experiment. HUMAN SUBJECT TRAINING REQUIRED
Most consumer product testing of the "Which is best?" type. This includes comparisons of popcorn, bubblegum, make-up, detergents, cleaning products, and paper towels.	These projects only have scientific validity if the Investigator fully understands the science behind why the product works and applies that understanding to the experiment. While many consumer products are easy to use, the science behind them is often at the level of a graduate student in college.
Any topic that requires people to recall things they did in the past.	The data tends to be unreliable. HUMAN SUBJECT TRAINING REQUIRED
Effect of colored light on plants	Several people do this project at almost every science fair. You can be more creative!
Effect of music or talking on plants	Difficult to measure.
Effect of running, music, video games, or almost anything on blood pressure	The result is either obvious (the heart beats faster when you run) or difficult to measure with proper controls (the effect of music). HUMAN SUBJECT TRAINING REQUIRED
Effect of color on memory, emotion, mood, taste, strength, etc.	Highly subjective and difficult to measure. HUMAN SUBJECT TRAINING REQUIRED
Any topic that requires measurements that will be extremely difficult to make or repeat, given your equipment.	Without measurement, you can't do science.
Any topic that requires dangerous, hard to find, expensive, or illegal materials.	We care about your safety and your parents' pocketbook.
Graphology or handwriting analysis	Questionable scientific validity. HUMAN SUBJECT TRAINING REQUIRED
Astrology or ESP	No scientific validity.
Any project in violation of state law, federal law, state science fair rules, or International Science & Engineering Fair rules.	In brief, you may not do a project that involves: Unacceptable risk (physical or psychological) to a human subject. Collection of tissue samples from living humans or vertebrate animals, Drugging, pain, or injury to a live vertebrate animal. Use of illegal or prohibited materials

Table excerpted from information at sciencebuddies.org

This is why you need to do some background research about your topic: you want to make sure that the question you're trying to answer has not already been answered! How do you find out? It may seem simple, but "Google" it! Check the internet and see if you find a project matching yours. If it has been done before, or if the answer to your experimental question is already known, you need to formulate a new idea or 'tweak' your current topic so that your experiment approaches that topic in an original way. The more you read and think about your topic the more ideas of how you can test it, change it, etc. will occur to you.

References:

ISEF official rules, student handbook, & paperwork: <http://www.societyforscience.org/isef/document/index.asp>. Here, you can find online forms and information for students and parents. In particular, check under the **Science Project Info** heading for helpful information.