



Pasadena ISD  
Secondary Science Fair 2009  
Grades 5-12

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## **Pasadena ISD Science Fair**

February 13 - February 14, 2009  
Secondary Science Fair  
(Grades 5 -12)  
San Jacinto Jr. College

## **Science Engineering Fair of Houston**

**for Qualifying Projects**  
**George R. Brown Convention Center**  
**March 12 – March 14, 2009**  
**50<sup>th</sup> Anniversary Year**

*<http://hunstem.uhd.edu/SEFH>*

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### Science Fair and the Pasadena ISD Curriculum

Experimental design can be one of the most valuable opportunities for students in a science class. It provides each student with the chance to select an area of science of personal interest, to ask a question about that area, and to experimentally determine the answer to that question, following scientifically appropriate techniques. From kindergarten to twelfth grade, the Texas Essential Knowledge and Skills (TEKS) require that students are able to successfully do experimental design. Communicating the results of the research is also required by the TEKS. The school science fairs provide an excellent format for students to communicate the results of their research. The skills developed in doing experimental design will serve the student well in his/her life.

Experimental design can also be a challenging experience. Selecting a topic, the first step of the process, is often the most difficult step of the entire experience. Students should be encouraged to choose a topic that involves their own personal interests. All areas of a student's life have questions that can peak the interest of the student and make that first step an exciting one.

The transition from experimental design to a science fair project is an easy one. Look inside for information to make that transition a successful one.

## Secondary Science Fair Experiment Guidelines

All projects must follow guidelines of the Science Engineering Fair of Houston and International Science and Engineering Fair to be eligible for District Science Fair judging. **All projects must be reviewed and have a coversheet attached indicating SRC approval or that SRC review was not needed.** The identical repetition of a previous year's project is not permitted.

### Experimenting with Vertebrates

There is an increasing concern over the use of vertebrates in student experimentation. Behavioral experiments are preferable over physiological experiments. The guidelines for working with vertebrates are included on the SEFH web page. They include:

No animal may be deprived of food or water at any time for any reason.

Animals may not be exposed to any conditions that may be considered harmful.

Animals may not be sacrificed for the purpose of experimentation.

Animals must be provided quality care after the experiment is concluded.

No dissection or surgical procedure may be used.

### Experimenting with Human Subjects

All rules concerning the use of vertebrates must be followed in working with human subjects. Teachers and SRC must review all surveys students may use prior to approval. Extremely personal data and controversial topics (sex, diseases, etc.) should be avoided. No individual can be identified.

### Working with Bacteria/Fungi and Other Microorganisms

Any experiment involving the culture or growth of microorganisms or fungi (mold) must be carried out under adult supervision. All contaminated substances should be disposed of in a sanitary method at the conclusion of the experiment. SRC approval is required.

### Working with Hazardous Substances

All chemical substances should be used under adult supervision. Hazardous substances should not be used. Controlled substances including prescription drugs, alcohol, and tobacco may not be used without SRC approval and in accordance with state and federal penal codes. Safety measures must be thoroughly addressed in the procedures.

All students should review the SEFH web site <http://hunstem.uhd.edu/SEFH/> for exact rules concerning both experimentation and project display.

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Forms, Forms, Forms and the Scientific Review Committee (SRC)

The Intel International Science Engineering Fair website, [www.sciserv.org](http://www.sciserv.org), has an **excellent Rules Wizard** that will guide you to the proper paperwork and rules for your project. This site is very easy to use, and an excellent tool to help ensure that you have all of the correct forms.

Filling out and submitting the SRC paperwork early will allow you to get it back early! Having the time to do the project correctly will result in a better project. **Final deadline for paperwork to be received by the SRC is Nov. 21. There are no exceptions to this deadline for any reason. School deadlines will be earlier and follow the same policy of no exceptions. Mark your calendars and keep up with deadlines.**

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Parents, this is for YOU!

Each year, many parents and guardians ask the question, "How much assistance should we give the student on his/her project?" There is no simple answer to this question. When students pursue graduate degrees in science and engineering, most of their major professors provide them with the general (and in many cases, the exact) topic for their research. The professor also serves as a close mentor while they perform the research and formulate their conclusions. To a lesser degree, this same procedure is followed in the "real world" of business and industry. In addition, very few major scientific accomplishments are truly the work of just one individual. Teachers and fair officials do expect that most of the work presented in a project is based on the efforts of the student. This is a major reason why our district judges spend so much time questioning the students about their project. We appreciate and encourage the fact that many projects end up involving the entire family, but the student should be the major participant in all phases of the project he/she is capable of doing.

Science Fair Categories

Each year, some students enter their projects in the wrong category, Since judges are required to judge the content of each project based on the category in which it is entered, these students are seriously penalized. Thus, we urge you to pay particular attention to the category that you indicate on the entry form. Once the form is turned in, the category cannot be changed. If you have questions, please ask for clarification.

Categories

Behavioral/Social Science	Chemistry	Engineering	Medicine and Health
Biochemistry	Computer Science	Environmental	Physics
Botany	Earth/Space Science	Mathematics	Zoology

### Science Fair Display Guidelines

The science fair project display should be designed to communicate the student's previous work. **It is not necessary for the display to contain all of the experimental apparatus and materials.** In general, these items make the display more likely to be damaged or cause damage to other projects. The following guidelines should be observed.

**Science fair projects must:**

**Be an investigation or experiment.**

**Collect observable data over time.**

**Include measurable data, expressed in proper metric units.**

**Include a minimum of three references in the bibliography.**

**Communicate data in at least three different formats.**

**Follow all safety procedures.**

**Include a written or typed journal containing dated entries of project work and progress.**

**Be exhibited on a show board not to exceed 78" wide x 30" deep x 48" high.**

**Be displayed on the tabletop. Projects must stand alone.**

**General Rules**

1. All exhibits must have a small label with the student's name, grade, school and teacher centered on the back bottom edge of the project. The label should not be visible from the front of the project. Logbook covers and inside front pages should display the project title. Student name,

grade, school and teacher should be on the last page of the logbook; that last page can be folded in half to cover that information during judging.

2. All projects must follow rules and guidelines of Science Engineering Fair of Houston, found on the website at <http://www.uhd.edu/academic/colleges/sciences/naturalscience/SEFH/>.

3. The display of anything that could be hazardous to the public or facility is prohibited. This includes, but is not limited to, the following:

Living organisms, including plants and animals

No animal parts may be displayed with the exception of hair, teeth, nails, dried animal bones, histological dry mount sections and completely sealed wet mount tissue slides

No chemical substances may be displayed.

No liquids, **including water**, may be displayed, except as allowed in SEFH rules (see website).

Any containers of commercial products displayed should be empty. This includes food products, cleaning products, etc.

No open flames permitted.

No cultures of mold or bacteria may be exhibited.

No food may be displayed.

4. Photographs have specific rules and restrictions. The SEFH web site should be checked for specific restrictions. Photographs showing the student doing the research ARE allowable.

5. Students displaying projects are representing Pasadena ISD to the public. Appropriate behavior is expected.

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### Science Fair Project Judging

Each secondary district science fair project will be judged. However, only projects from grades 7-12 are eligible to advance to the Science Engineering Fair of Houston. Grades 5-6 will compete in one division with grades 7 and above in a separate division.

## SCIENCE FAIR PARENT LETTER

Dear Students and Parents,

It is time for our students to work and think like a scientist. A science fair project provides students the opportunity to apply all of the lessons and skills learned in the science class. Attached are the district guidelines and information students and parents will need to make this a successful experience. While class time may be used to assist students in the scientific process, each student will need to work on their own to finish the project at home. Students will be required to keep a lab notebook detailing their experiences and will be expected to be able to orally explain their project.

The following are important dates:

October 16, 2008 – Parent informational meeting at Miller Intermediate 6:30-7:30  
November 21, 2008 – All appropriate paperwork is due to your campus coordinator  
February 13 and February 14 – District Science Fair for grades 5-12

Other dates to remember:

Parent/Guardian:

Please sign below to signify that you and your child have read and reviewed the guidelines for the 2008-2009 science fair experience.

Parent/Guardian signature: \_\_\_\_\_

Date: \_\_\_\_\_

Student signature: \_\_\_\_\_