

**60th Annual**

**Clear Creek Science and Engineering Fair**

**Secondary School Science Fair**

***Learner Support Center***

***2903 Falcon Pass***

***Houston TX 77062***

***January 16 and 17, 2020***

Science Engineering Fair of Houston (SEFH)

for Qualifying Projects

George R. Brown Convention Center

*February 14 and 15, 2020*

[www.sefhhouston.org](http://www.sefhhouston.org)

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. From kindergarten to twelfth grade, the Texas Essential Knowledge and Skills (TEKS) require that students can plan, design, and implement experiments. The school science fairs provide an excellent format for students to communicate the results of their research. The skills developed while conducting an experimental design project will serve the student his/her entire life.

Selecting a topic, the first step of the process. Students should begin by looking at their own personal interests. If they have a love of football, looking at questions involved with handling the ball, the texture of the football, or physical properties of the gear may spark an interest. Student interested in dance might concentrate on how position of the body affects spin, or factors affecting the wear and tear on the toes of shoes; the possibilities are endless! All areas of a student’s life have questions that can pique the interest of the student and make that first step an exciting one. It is important that the projects be an original idea, and at this stage of the Science and Engineering Fair we do not recommend the use of Science Buddies website.

Secondary Science Fair Experiment Guidelines

* All secondary projects must follow guidelines of the Science Engineering Fair of Houston (SEFH) and International Science and Engineering Fair to be eligible for District Science Fair judging.
* **All grade 7 – 12 projects must be registered through Scienteer, which is the online registration program.**
* **6th grade projects will complete a separate registration and approval forms.**
* 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:

* Animals may not be exposed to any conditions that may be considered harmful, including dissection or surgical procedures.
* Animals may not be sacrificed for the purpose of experimentation.
* Animals must be provided quality care after the experiment is concluded.

###### Experimenting with Human Subjects

All rules concerning the use of vertebrates must be followed in working with human subjects. *Teachers, IRB, 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 and cannot be done at home*. 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://www.sefhouston.org/**](http://www.sefhouston.org/) **or the International Science Engineering Fair web site** [**http://www.societyforscience.org/ISEF/**](http://www.societyforscience.org/ISEF/)

**for exact rules concerning both experimentation and project display.**

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

**All approval forms MUST be completed prior to experimentation.** This includes forms through the online program at [www.SCIENTEER.com](http://www.SCIENTEER.com) and the 6th grade approval forms

Filling out and submitting the SRC paperwork early will allow you to start your project earlier. Having the time to do the project correctly will result in a better project.

**CCISD’s final deadline for all projects to be approved by the SRC is 11/4/2019. This is an important deadline, so be aware and start early. Experimentation may not begin until your project is approved by the SRC. School deadlines will be earlier, so it is important to work closely with the Science Fair Sponsor on your campus.**

The *Scientific Review Committee (SRC)* is a group of volunteers that are responsible for evaluation of your research plans, certifications, research and exhibits for compliance with the district, Houston, and international rules. They will review the forms and research plan in Scienteer and approve or indicate changes that must be addressed. Project that require modification must have the modification approved by the **SRC by ­­­­­11/11/2019.**

**Parents**

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 topic for their research. The professor also serves as a close mentor while they perform the research and formulate their conclusions. In addition, very few major scientific accomplishments are truly the work of just one individual. Fair officials expect that 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.

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| **Science Fair Categories** **\*6th Grade \*Junior (Grades 7 – 8) \* Senior (Grades 9 – 12)**

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| * Animal Science
* Behavioral & Social Science
* Biochemistry & Microbiology
* Chemistry
* Computer Science
* Earth and Space Science
* Energy and Transportation
 | * Environmental Science
* Mathematics
* Medicine and Health
* Physics and Astronomy
* Plant Science
* Robotics & Intelligent Machines
 | * Engineering:

 -Aerospace -Chemical -Electrical/Mechanical/Civil -Materials & Bioengineering |

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| **Team projects will compete in the same category as the individual projects.**  |

Science Fair Display Guidelines

Every effort will be made to provide general protection; however, all equipment and materials exhibited during the science fair are entered at the risk of the exhibitor. Neither the Science Fair Director nor the sponsors assume any responsibility for loss or damage to such equipment and materials.

**Project Dimensions**

All exhibits must have a backdrop. Maximum height is 274 cm (108 in) including table (table height is 76cm [30 in]). The width is not to exceed 122 cm (48 in) from side to side. Depth is not to exceed 76 cm (30 in) from front and back. **Projects must stand alone.** 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.

# General Rules

1. **All exhibits must have a small label with the student's name, grade, school and teacher 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.sefhouston.org/>**.**

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:

1. Living organisms, including plants and animals
2. 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
3. No chemical substances may be displayed.
4. No liquids, **including water**, may be displayed, except as allowed in SEFH rules (see website).
5. Any containers of commercial products displayed should be empty. This includes food products, cleaning products, etc.
6. No open flames permitted.
7. No cultures of mold or bacteria may be exhibited.
8. **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. Credits for photographs should be included.

## Science Fair Project Judging Criteria

Judges of the secondary science fairs are asked to judge projects by the following criteria:

-Project Objectives (20%) -Project Design (30%) -Project Presentations (10%)

-Project Execution (20%) -Project Conclusions (20%)

The lab notebook is a critical part of the project. A quality lab notebook is as important as the information on the backboard. The SEFH web site at <http://www.sefhouston.org/> has excellent lab notebook guidelines. Among the most critical are:

* + the notebook should be bound. The cover should contain a title and time period for the data.
	+ the first two pages are table of contents, with remaining pages numbered on top outside corner of the page. No page should ever be removed. Written entries should be in ink and printed if the researcher’s handwriting is difficult to read.
	+ right-hand pages should be used for formal entries and left-hand pages for calculations, doodling, scratch paper, etc. The entry should be dated when information is added.
	+ Photos, computer printouts and other such items should be glued or taped on a right-hand page, and then labeled.

The lab notebook is a working document and may definitely show signs of use. However, entries should be legible and complete and the book should reflect all the work carried out by the student, including “wrong turns”.

**Schedule of Awards**

Each student (K – 12) entering a school science fair will receive a *Certificate of Participation*.

**Secondary Science Fairs – School Fairs**

Each school fair may award ribbons for outstanding projects at their school. In addition, all students will receive credit for science fair if they follow the school rules for the project

**Sixth Grade Fairs** (Grade 6)

Each school fair may award ribbons for first through fifth place and honorable mentions(s) in each category. These projects may advance to the District Science Fair.

**Junior Division Fairs** (Grades 7 – 8)

Each school fair may award ribbons for first through fifth place and honorable mentions(s) in each category. These projects may advance to the District Science Fair.

**Senior Division Fairs** (Grades 9 – 12)

Each school fair may award ribbons for first through fifth place and honorable mention(s) in each category. These projects may advance to the District Science Fair.

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| CCISD SEF Special Awards* Students who have participated in 5, 8, 10, or 12 science fairs will receive a special award ribbon or trophy.
* **"Lucky 13 Award"** is given to those students who have entered science fair from kindergarten through the 12th grade.
* Recipients of 12 Year Participation and "Lucky 13" awards will be recognized at the Awards Ceremony.
* High School Students who have participated in science fair all 4 years will receive a medal to be awarded at Senior Awards on each campus.
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**Important Dates to Remember:**

* **September 11, 2019: Research plan form due to science teacher for approval.**
* **October 4, 2019: Approved research plan and form 1A completed in Scienteer.** Project goes to IRB if it involves human subjects.
* **October 10, 2019: Students with approved research plans must register using the following link:**
	+ [**http://bit.ly/CCISDSEFSeniorRegistration**](http://bit.ly/CCISDSEFSeniorRegistration) **for High School students**
	+ [**http://bit.ly/CCISDSEFIntermedRegistration**](http://bit.ly/CCISDSEFIntermedRegistration) **for Intermediate School students**
* November 4, 2019: All project forms completed and submitted in Scienteer for SRC approval.
* November 11, 2019: All SRC issues completed and final SRC approval has been given. After this step is complete, students may begin experimentation.

\*Student are not required to wait for the deadline. Remember, the sooner you begin the process, the sooner you may begin experimentation.

\*\*Science Magnet deadlines may be different, please check with your Magnet teacher.

## CCISD Science and Engineering Fair

**Learner Support Center**

**2903 Falcon Pass**

**Houston, TX 77062**

### January 16 and 17, 2020

**Secondary Fair** (Grade 6 – 12) *Clear Creek Intermediate School Gymnasiums*

* **Sixth Grade Division** (Grades 6) *projects only*
* **Junior Division** (Grades 7 – 8)
* **Senior Division** (Grades 9 – 12)

**Project Setup Thursday, January 16, 2020 from 2:00 to 7:00 PM ONLY**

 **Learner Support Center**

All projects must be set up between the hours of 2:00 and 7:00 p.m. **Any projects not in place at 7:00 P.M. will be removed from the entry list.** Final judges' lists are prepared with missing projects deleted following set up. For this reason, projects must be set up during the scheduled time. Projects may not be set up on Monday for any reason.

**Judging Friday, January 17, 2020**

Judging will begin between 12 and 1 p.m. All exhibitors in grades 7 – 12 (6th will not present to judges) must remain with projects for interviews with judges. Exhibitors will be released by category beginning about 5:00 p.m. Judging may last past 7:00 p.m. **Parents are not allowed in gymnasium during judging.**

**Project Removal**

**Projects will be taken home at the end of judging on Friday, January 17, 2020**

**Awards and Awards Ceremony**

**Learner Support Center Commons**

**January 22, 2019**

**7:15 – 9:00 P.M.**

**Winners and award qualifiers will be notified through the campus Science Fair Sponsor and email.**