

## 51<sup>st</sup> Annual

### **Clear Creek ISD Science Fairs 2012** *Elementary School Science Fairs*

#### **Schedule of Elementary School Fairs** **Elementary Science Fair Judging**

These are the dates that judging will take place in buildings. Students may be required to have projects at school before this date. Please contact the school for more specific information. **Projects may not be carried to or from school on the school bus! Please arrange alternate transportation.**

Armand Bayou ES.....	Tuesday, December 13, 2011	League City ES.....	Monday, Nov. 14, 2011
Bauerschlag ES.....	Monday, December 12, 2011	McWhirter ES.....	Thursday, December 8, 2011
Bay ES.....	Tuesday, January 10, 2012	Mossman ES.....	Thursday, January 12, 2012
Brookwood ES.....	Wednesday, January 11, 2012	North Pointe ES.....	Monday, January 9, 2012
Clear Lake City ES.....	Tuesday, December 6, 2011	Parr ES.....	Tuesday, December 6, 2011
Falcon Pass ES.....	Thurs., November 10, 2011	Robinson ES.....	Tuesday, November 29, 2011
Ferguson ES.....	Wed., November 16, 2011	Ross ES.....	Wed., December 7, 2011
Gilmore ES.....	Tuesday, January 10, 2012	Stewart ES.....	Tuesday, November 8, 2011
Goforth ES.....	Friday, December 9, 2011	Ward ES.....	Tuesday, December 13, 2011
Greene ES.....	Thursday, December 8, 2011	Weber ES.....	Wed., December 7, 2011
Hall ES.....	Tuesday, December 6, 2011	Wedgewood ES.....	Monday, December 5, 2011
Hyde ES.....	Wed., December 7, 2011	Whitcomb ES.....	Friday, January 13, 2012
Landolt ES.....	Wed., January 11, 2012	White ES.....	Thurs., December 8, 2011

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### **Clear Creek District Science Fair**

January 22 – January 25, 2011

#### **Elementary Fair (Grades 4-5)**

*Clear Falls High School Competition Gymnasium at the Education Village*

#### **Secondary Fair (Grades 6-12)**

*Bayside Intermediate Gymnasiums at the Education Village*

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### **Science Fair and the Clear Creek ISD Curriculum**

Independent research can be one of the most valuable opportunities for students in a science class. It provides each child the chance to select an area of science of interest to him/her, 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 this independent research. 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 independent research will serve the student his/her entire life. Look inside for tips, hints, guidelines and rules to make this a positive experience for the child, the teacher and the parents.

### **CCISD 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 12<sup>th</sup> grade. Recipients of 12 Year Participation and “Lucky 13” awards will be recognized at the Secondary Awards Ceremony.

## Science Fair Categories Elementary (K – 5)

- Biological Sciences
- Earth/Space Sciences
- Mathematics
- Consumer Science
- Physical Sciences

### Where Do You Start?

Selecting a question for research can be the most difficult step in the project. 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, 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 peak the interest of the student and make that first step an exciting one.

Avoid projects that are demonstrations of a scientific principle or event, such as model volcanoes or tornadoes in a bottle. Steer clear of books and websites that offer “cookbook” experiments. Independent research demands that students determine what procedures and materials should be used to answer a question. The following is a review of the Scientific Method with some key questions/directions on how to design and conduct an experiment to use for a science or engineering fair project.

#### Problem/Purpose

- What idea are you trying to test?
- What is the scientific question you are trying to answer?

#### Hypothesis

- Make a prediction regarding the outcome of your experiment and explain your thinking. For example, “My hypothesis is .....because.....”
- State the results you are predicting in measurable terms. For example, “If....., then.....” “My hypothesis was supported by .....”

#### Materials:

- List all materials and equipment that were used.
- Your list of materials should include all of the ingredients of the procedure recipe.

#### Procedure

- Your procedure should be like a recipe--another person should be able to perform your experiment following your procedure. Test this with a friend or parent to be sure you have not forgotten anything. This is an important part of doing good science.
- Be clear about the variables (elements of the experiment that change to test your hypothesis) versus your controls (elements of the experiment that do not change).
- Be very specific about how you will measure results to prove or disprove your hypothesis. You may want to develop a regular timetable for measuring results or making observations (i.e. every hour, every day, every week).
- Sample size should be as large as possible and/or the experiment should be repeated a large number of times (with each repetition considered a “trial”).

#### Observations/Data/Results

- **Keep a detailed journal (laboratory notebook)** of observations, data and/or results of your scientific process. This information can be data measurements and written notes about what you are sensing (hearing, seeing, or touching) about your experiment. Always utilize the International System of Units (**metric system**) when measurements are required.
- Where appropriate, have both Control and Experimental groups.
- When possible, collect enough data for a statistical analysis.
- Photograph your project results or phases of the project if appropriate to help your analysis and possibly to demonstrate your experiment on your exhibit board. **Only the student doing the research can appear in photographs.**
- Use charts, graphs and tables to summarize your data.
- Students are required to include an additional **one page**, hand written or typed, **report/expository essay to support learning.**

#### Analysis:

- Explain your observations, data and/or results. This is a summary of what your data has shown you.
- List the main points of what you've learned.
- Why did the results occur? What did your experiment prove?

#### Conclusion:

- Answer your problem/purpose statement.
- Was your hypothesis supported by the evidence found in the results of the experiment? Explain why or why not.
- What does it all add up to? What is the value of your project?
- What further study do you recommend given the results of your experiment? What would be the next question to ask?
- If you repeated your project, what would you change?

## Elementary Science Fair Experiment Guidelines

All exhibits must be individual projects to be eligible for judging. Teachers, parents, and sponsors should supervise rather than assist in project completion. The identical repetition of a previous year's project is not permitted.

### Experimenting with Vertebrates and Invertebrates

There is an increasing concern over the use of vertebrates in student experimentation. Secondary students are greatly limited by the rules of the International Science and Engineering Fair. **For elementary students, teachers should carefully review projects involving vertebrates and invertebrates and encourage students to first and foremost consider the safety and care of the animal.** Behavioral experiments are preferable over physiological experiments. The guidelines below **MUST** be followed when working with vertebrates and invertebrates.

- 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 must approve of all surveys students may use.** Extremely personal data and controversial topics (sex, diseases, etc.) should be avoided. No individual experimental subject should be identified or photographed.

### Working with Bacteria/Fungi

Any experiment involving the culture or growth of microorganisms or fungi (mold) must be carried out under adult supervision. **Cultures must remain sealed at all times.** No cultures, rotted food, or other contaminated substances may be displayed with the project. All contaminated substances should be disposed of in a sanitary method at the conclusion of the experiment.

### 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 should not be used.

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## 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. **No security measures will be enforced after 8 p.m. Wednesday, the deadline for project removal!**

### Project Dimensions

All exhibits must have a backdrop **with a Minimum size of** height 80 cm (28 in) x width 41 cm (22 in). **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.**

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 sides of the project board should be able to fold in and lie flat. 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 centered on the back top edge of the project.** The label should not be visible from the front of the project. Logbook covers and Research Report 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. The exhibit title should be limited to six words or less, and a maximum of 50 letters/characters.
2. **All projects must follow rules and guidelines of Science Engineering Fair of Houston, found on the website at <http://www.uhd.edu/naturalscience>.**
3. The display of anything that could be hazardous to the public or facility is prohibited. Fair director reserves the right to remove items from the display. The most common infractions are listed below.
  - a. No living organisms, **including plants and animals.**
  - b. No animal parts may be displayed **including hair, teeth, nails, dried animal bones, blood, histological dry mount sections and completely sealed wet mount tissue slides.**
  - c. No chemical substances may be displayed. No batteries or light bulbs can be displayed.
  - d. No liquids, **including water**, may be displayed, except as allowed in SEFH rules (see website).
  - e. Any containers of commercial products displayed should be empty and clean. This includes food products, cleaning products, etc.
  - f. No open flames or projectiles permitted.
  - g. No cultures of mold or bacteria may be exhibited.
  - h. **No food may be displayed including gum, candy, dried beans, seeds, sugar, spices and salt.**
  - i. **No glass or glass containers** may be included in the display at the elementary level. No glass thermometers or magnifying glasses.
  - j. No soil, dirt, rocks, gravel, clay, play dough, or sand may be exhibited. No fertilizers, chemicals, or pesticides may be displayed.
4. **Photographs of the experiment are encouraged.** Those photographs document the experimental set-up and results of the experiment more effectively than bringing the equipment to display in front of the project board. The SEFH web site should be checked for specific restrictions. **Photographs showing the student doing the research ARE allowable.** Photos that allow identification of other people **are not** allowed.

## Science Fair Project Judging Criteria

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

### **Scientific Thought (30%)**

Scientific experimental design is used for the project. Variables are clearly defined and information collected is accurate and complete. Conclusions reached are accurate.

### **Creative Ability (30%)**

Project is unique. Exhibit shows original thinking or a unique method or approach. Project demonstrates ideas arrived at by the child.

### **Understanding (10%)**

The project explains what the student learned about the topic. References are listed.

### **Clarity (10%)**

The information about the project is clearly organized and communicated.

### **Dramatic Value (10%)**

Project board is well designed and constructed. Important ideas are emphasized. Project is visually appealing.

### **Technical Skill (10%)**

Student does majority of work and help received is acknowledged. Written materials show attention to grammar and spelling.

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.uhd.edu/academic/colleges/sciences/naturalscience/SEFH> has excellent lab notebook guidelines.

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## Schedule of Awards

### Elementary Science Fairs – School Fairs

#### **Primary Grades (Grades K - 3)**

These projects are displayed only at the school fair. Each student entered will receive a Certificate of Participation.

#### **Upper Elementary Grades (Grades 4 - 5)**

First through fifth place and honorable mention(s) may be awarded in each category. **Only the top two projects in each category will advance to the District Science Fair.** Each student entered will receive a Certificate of Participation.

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## CCISD District Science Fair January 22, 2012 – January 25, 2012

### Elementary Fair (Grades 4 – 5) *Clear Falls High School Competition Gymnasium*

#### **Project Setup**

**Sunday, January 22, 2012 from 1:00 p.m. until 5:00 p.m. ONLY**

**All projects must be set up between the hours of 1:00 p.m. and 5 p.m. 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**

**Monday, January 23, 2012**

Judging of the District Elementary Fair will be Monday. Results will be announced at the Awards Ceremony on Tuesday evening. Decision of the judges is final.

#### **Awards and Awards Ceremony**

**Tuesday, January 24, 2012**

An awards ceremony will be conducted in the **Bayside Intermediate Commons Area at 7:00 p.m.** All winners will be announced at that time. Winners' lists will be sent to each school on Wednesday.

The Elementary Fair will award a first place, second place, third place, fourth place, fifth place, and honorable mention(s) in each of the five categories at each grade level. A gold medal, silver medal, and bronze medal will be selected in each category from the combined grade levels.

#### **Public Viewing**

**Tuesday, January 24, 2012**

Projects will be on display from 5:00 p.m. to 8:00 p.m. For the convenience of those attending the public viewing and awards ceremony, projects may be removed from 8:00 – 9:00 that evening.

#### **Project Removal**

**Wednesday, January 25, 2012**

**All projects must be removed between the hours of 8 a.m. to 12:00 noon.**