

Sacramento

Regional Science & Engineering Fair

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Foundation

VOLUNTEER JUDGE INFORMATION PACKET

Sacramento Regional Science & Engineering Fair
March 26-27, 2010
Rosemont High School

2010 Judge Schedule

Friday, March 26

- 5:30 – 6:00 p.m. **Registration:** Check in and pick up packet.
- 6:00 – 7:00 p.m. **Dinner:** Enjoy a complimentary dinner and get to know fellow judges.
- 7:00 – 8:30 p.m. **Orientation and Project Review:** Overview of process and explanation of judging guidelines and evaluation criteria. Judge Coordinators will assign projects and assist teams with any questions. Preliminary review of projects.

Saturday, March 27

- 7:30 – 8:00 a.m. **Check In:** Check in with Judge Coordinator.
- 8:00 – 9:00 a.m. **Judges Review Projects:** Time for judges to review assigned project boards and notebooks without students being present.
- 9:00 – 12:00 p.m. **Judges Interview Students:** Judges will proceed to assigned projects to interview students for 5-10 minutes each. It is important to individually interview all the students assigned to you.
- 12:00 – 1:00 p.m. **Lunch:** Lunch will be provided to judges in the cafeteria where no students will be present.
- 1:00 – 2:00 p.m. **Tally Scores:** Review score sheets and report back to Judging Coordinator with final results.
- 2:00 – 4:00 p.m. **Grand Prize Judging:** Judging for Grand Prizes will take place. Students in the Senior Division will be present at their projects.
- 4:30 – 5:30 p.m. **Awards Ceremony:** Judges are encouraged to stay and participate in the awards ceremony.

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Schedule of Events

Friday, March 26

- 3:30 – 5:30 p.m. Exhibit Hall Set-Up
- 5:30 – 7:00 p.m. Student Registration & Project Set-Up - Main Gymnasium Entrance
- 5:30 – 8:00 p.m. Judge Registration, Dinner & Orientation - Cafeteria

Saturday, March 27

- 7:30 – 8:00 a.m. Judge Check-In – Cafeteria
- 8:00 – 9:00 a.m. Judges Review Projects – Large & Small Gymnasium
Students Are Not Present
- 9:00 – 12:00 p.m. Judges Interview Students – Large & Small Gymnasium
All Students Must Be Present
- 9:00 – 2:00 p.m. Sacramento Educator Academy – Dance Classroom
- 12:00 – 4:00 p.m. **Fair Open to the Public**
- 12:00 – 1:00 p.m. Lunch for Judges – Cafeteria
- 12:30 – 2:00 p.m. Mad Science Presents “Sounds Like Science” - Auditorium
- 1:00 – 2:00 p.m. Lunch for Students – Cafeteria
- 2:00 – 4:00 p.m. Grand Prize Judging of Senior Projects – Small Gymnasium
Senior Division Students Must Be Present
- 4:30 – 6:00 p.m. **Awards Ceremony – Auditorium**
- 6:00 – 7:00 p.m. Project Removal

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Judging Guide

INTRODUCTION

The success of our science and engineering fair depends to a large extent on the quality of the project and your judging. This guide will help prepare you. Please review it carefully. The information and guidelines here will make your task easier and more enjoyable.

A science and engineering fair is a competition based upon the quality of the projects and experiments done by students. You are judging the results of these experiments and projects. The fair has three purposes: to stimulate young peoples' interest in science and engineering, to provide an educational experience to the participants, and to publicly recognize the students' talents and achievements.

The Sacramento Regional Science & Engineering Fair (SRSEF) is managed by the Sacramento Regional Science & Engineering Fair Foundation. The Regional Fair is affiliated with the Intel International Science & Engineering Fair (ISEF). Each year in May, we send Grand Prize winners (from grades 9 through 12) to the Intel ISEF. Approximately 400 regional fairs and many foreign countries participate. In addition, up to 20 of our winners in graders 7 through 12 are eligible to participate in the California State Science Fair.

INFORMATION FOR VOLUNTEER JUDGES

Overview

Judging for the Sacramento Regional Science & Engineering Fair is a two-day process. Day one consists of volunteer judge registration, dinner and orientation. Day two consists of judging projects and interacting with students.

Registration, Dinner & Orientation

All volunteer judges are expected to attend a mandatory orientation Friday, March 26 in the cafeteria at Rosemont High School. Judge registration is from 5:30 – 6:00 p.m. Judge's can pick up packets that will contain a name tag, general judging information, judging guidelines and evaluation criteria, a sample scoring sheet and much more. Enjoy a complimentary dinner from 6:00 - 7:00 p.m. and get to know your fellow volunteer judges. Orientation will begin at 7:00 p.m. and will provide an overview of the judging process and an explanation of judging guidelines and evaluation criteria. We will then break up into groups and meet with assigned judging coordinators and review assigned projects. Feel free to ask questions during this time.

Judging Schedule for Saturday, March 27, 2010

7:30 – 8:00 a.m.	Check In: Check in with Judge Coordinator.
8:00 – 9:00 a.m.	Review Projects: Time for judges to review assigned project boards and notebooks without students being present.
9:00 – 12:00 p.m.	Judging: Judges will proceed to assigned projects to interview students for 5-10 minutes each. It is important to individually interview all the students assigned to you.
12:00 – 1:00 p.m.	Lunch: Lunch will be provided to judges in the cafeteria where no students will be present.
1:00 – 2:00 p.m.	Tally Scores: Review score sheets and report back to Judging Coordinator with final results.
2:00 – 4:00 p.m.	Grand Prize Judging: Judging for Grand Prizes will take place. Students in the Senior Division will be present at their projects.
4:30 – 5:30 p.m.	Awards Ceremony: Judges are encouraged to stay and participate in the awards ceremony.

JUDGING PROCEDURE

Check In

Check in begins at 7:30 a.m. When you check-in with your judge coordinator, you will receive your assigned scoring sheets. It is vital that these sheets be returned to your team leader upon completion.

Review Projects and Begin Judging

All participating projects will be set up and ready for review during this time. From 9:00 a.m. – 12:00 p.m. students will be present at their projects for interviews. Plan to spend 5-10 minutes with each student (but no more than 15). It is very easy to lose track of time, especially if the project is interesting. Even if you do not feel the student's project merits an award, you should still interview the student. Use the time to make the Fair an educational experience.

At the conclusion of the evaluation, score the student and project (not in front of the student). Repeat this procedure for all assigned projects.

Lunch, Scores & Recommendations

Enjoy a complimentary lunch while you interact with fellow judges. Take this time to go over score sheets. We also ask that you complete a Comments and Recommendation Form for each project you evaluate. A copy of this form will be provided to the student AFTER the Fair as feedback. Please note that these comments will be shared with the student, teacher and parent.

Grand Prize Judging

Volunteer judges who are assigned to Grand Prize judging will have time to interview top projects. The judge coordinator will assist with any questions and or tie breakers.

Awards Ceremony

Awards will be presented to the students at the award ceremony the evening of the Fair. All judges are cordially invited to attend. The ceremony is held at the school auditorium.

JUDGE INFORMATION

Judging Guidelines & Evaluation Criteria

As an affiliated Fair, we closely follow the judging guidelines and evaluation criteria of the Intel International Science & Engineering Fair. Judging is conducted using a 100-point scale with points assigned to creative ability, scientific thought or engineering goals, thoroughness, skill, and clarity. Team projects have a slightly different balance of points for teamwork. Please see the full list of judging guidelines and evaluation criteria provided in this packet.

Judging Assignments

There are four types of judging assignments, Grand Prize, Special Awards, Senior Division and Junior Division. A judging coordinator is assigned to each group and will be announced at the orientation. Grand Prize and Senior Division judges will be in teams of three.

Judging Categories

Entries are displayed by division and category. Each project is identified by its project number and title. The project number has three parts: the first part identifies the student's division and whether it is an individual (I) or team (T) project; the second indicates the category and unique identifier within the grade and category; and the third is a special confirmation number. For example SRI-BIO-13 refers to senior division, individual project, biology followed by unique ID code.

Awards

There are two kinds of awards. *Category awards*, which are given by SRSEF for scientific merit, include first, second and third place. *Special awards* are given by various professional organizations and companies. Special awards may take many forms, including certificates, scholarships and personal items.

Category Awards

Students compete as individuals or teams up to three members. Students are separated into divisions. There are two divisions: senior division, which is grades 9 through 12 and junior division, which is grades 6 through 8. All students are judged against students in the same division and similar categories, for first, second and third place awards.

Junior division categories:

- Behavioral & Social Sciences
- Biological Sciences
- Engineering
- Math & Computer Sciences
- Physical Sciences

Senior division categories:

- Behavioral & Social Sciences
- Biology
 - Animal Sciences, Cellular & Molecular Biology, Medicine & Health Sciences, Microbiology, Plant Sciences
- Chemistry
 - Biochemistry & Chemistry
- Earth & Environmental Sciences
 - Earth & Planetary Sciences, Environmental Management, Environmental Sciences, Physics & Astronomy
- Engineering
 - Electrical & Mechanical Engineering, Materials & Bioengineering Engineering, Energy & Transportation
- Math & Computer Sciences
 - Computer Sciences, Mathematical Sciences

Special Awards

The criteria for the special awards are determined by the sponsoring organization. Judging for these awards are usually done by a member of the sponsoring organization but may, if requested, be provided by SRSEF.

Grand Prize Awards

Projects participating in the senior division are eligible to receive the grand prize award which advances them to participate in the Intel International Science & Engineering Fair. Three individuals and two team projects will be awarded grand prizes.

CONCLUSION

The purpose of the Sacramento Regional Science & Engineering Fair is to educate and encourage these potential scientists and engineers to excel. Certainly the students are encouraged by the awards you give, but sometimes a constructive suggestion or recommendation may inspire a student to continue his/her studies. We hope that you enjoy the experience and return next year to judge. Thanks for all your hard work and dedication!

Judging Guidelines & Evaluation Criteria

Judging is conducted using a 100-point scale with points assigned to creative ability, scientific thought or engineering goals (II A and B respectively), thoroughness, skill, and clarity. Team projects have a slightly different balance of points for teamwork. The following is a list of questions and criteria that can assist you in interviewing the finalists and aid in your evaluation of the finalists' projects.

I. Creative Ability (Individual – 30 pts.; Team – 25 pts.)

- A. Does the project show creative ability and originality in the questions asked?
 - The approach to solving the problem, the analysis of the data, the interpretation of the data?
 - The use of equipment, the construction or design of new equipment?
- B. Creative research should support an investigation and help answer a question in an original way.
- C. A creative contribution promotes an efficient and reliable method for solving a problem. When evaluating projects, it is important to distinguish between gadgeteering and ingenuity.

II. Scientific Thought (Individual – 30 pts.; Team – 25 pts.)

- A. Is the problem stated clearly and unambiguously?
- B. Was the problem sufficiently limited to allow a plausible approach? Good scientists can identify important problems capable of solutions.
- C. Was there a procedural plan for obtaining a solution?
- D. Are the variables clearly recognized and defined?
- E. If controls were necessary, did the student recognize their need and were they used correctly?
- F. Is there adequate data to support the conclusions?
- G. Does the finalist or team recognize the data's limitations?
- H. Does the finalist or team understand the project's ties to related research?
- I. Does the finalist or team have an idea of what further research is warranted?
- J. Did the finalist or team cite scientific literature or only popular literature?

II. Engineering Goals (Individual – 30 pts.; Team – 25 pts.)

- A. Does the project have a clear objective?

- B. Is the objective relevant to the potential user's needs
- C. Is the solution workable, acceptable to the potential user, economically feasible?
- D. Could the solution be utilized successfully in design or construction of an end product?
- E. Is the solution a significant improvement over previous alternatives?
- F. Has the solution been tested for performance under the conditions of use?

III. Thoroughness (Individual – 15 pts.; Team – 12 pts.)

- A. Was the purpose carried out to completion within the scope of the original intent?
- B. How completely was the problem covered?
- C. Are the conclusions based on a single experiment or replication?
- D. How complete are the project notes?
- E. Is the finalist or team aware of other approaches or theories?
- F. How much time did the student or team spend on the project?
- G. Is the finalist or team familiar with scientific literature in the studied field?

IV. Skill (Individual – 15 pts.; Team – 12 pts.)

- A. Does the finalist or team have the required laboratory, computation, observational and design skills to obtain the supporting data?
- B. Where was the project performed? (home, school laboratory, university laboratory)
Did the finalist or team receive assistance from parents, teachers, scientists or engineers?
- C. Was the project completed under adult supervision or did the finalist or team work largely alone?
- D. Where did the equipment come from? Was it built independently by the finalist or team? Was it obtained on loan? Was it part of a laboratory where the finalist or team worked?

V. Clarity (Individual – 10 pts.; Team – 10 pts.)

- A. How clearly does the finalist or team discuss his/her/their project and explain the purpose, procedure, and conclusions? *Watch out for memorized speeches that reflect little understanding of principles.*
- B. Does the written material reflect the finalist's or team understanding of the research?
- C. Are the important phases of the project presented in an orderly manner?
- D. How clearly are the data presented?
- E. How clearly are the results presented?
- F. How well does the project display explain the project?
- G. Was the presentation done in a forthright manner, without tricks or gadgets?
- H. Did the finalist or team perform all the project work or did someone help?

VI. Teamwork (Team – 16 pts.)

- A. Are the tasks and contributions of each team member clearly outlined?
- B. Was each team member fully involved with the project, and is each member familiar with all aspects of the project?
- C. Does the final work reflect the coordinated efforts of all team members?



SACRAMENTO REGIONAL SCIENCE & ENGINEERING FAIR SCORING SHEET INDIVIDUAL AND TEAM PROJECTS

PROJECT TITLE _____ PROJECT NO. _____

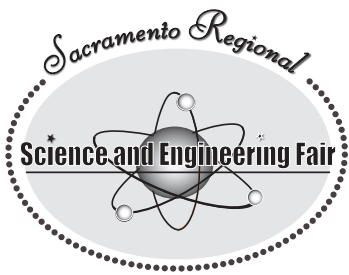
JUDGE _____

POINTS

CREATIVE ABILITY	<p>Does this project show creative ability and originality in the questions asked?</p> <p style="text-align: right;">30 Points Individual 25 Points Team</p>	
OR	OR	
ENGINEERING GOAL	<p>Does the project have a clear objective relevant to the needs of the potential user and has it been tested to determine if it is workable?</p> <p style="text-align: right;">30 Points Individual 25 Points Team</p>	
THOROUGHNESS	<p>Is the project carried out to completion within the scope of the original intent? Has scientific literature been searched, experiments repeated and careful record kept?</p> <p style="text-align: right;">15 Points Individual 12 Points Team</p>	
SKILLS	<p>Does the student(s) have the required laboratory, computation, observational and design skills to obtain the supporting data?</p> <p style="text-align: right;">15 Points Individual 12 Points Team</p>	
CLARITY	<p>How clearly does the student(s) discuss the project and explain the purpose, procedure, and conclusions?</p> <p style="text-align: right;">10 Points Individual 10 Points Team</p>	
TEAMWORK (Team Projects Only)	<p>Are the tasks and contributions of each team member clearly outlined?</p> <p style="text-align: right;">16 Points Team</p>	
TOTAL POINTS (maximum = 100)		

COMMENTS:

Judge's Signature



Judges' Comments and Recommendations

PROJECT NO. _____

PROJECT TITLE: _____

Commendations:

- Project shows creative ability and originality.
- Project has a clear objective.
- The problem is stated clearly and unambiguously.
- Project shows understanding of the scientific principles involved.
- Project provides adequate data to support the conclusion.
- Project shows understanding of unanswered questions remaining to be investigated.
- Project is clearly the work of the student, without adult assistance.
- Project shows evidence of hard work.
- The project notebook is neat, organized and clear.
- The project display board is neat, organized and clear.
- The student clearly explained the project during interviews.

Suggestions for Improvement:

- Project objective is unclear.
- More attention is needed to scientific principles involved.
- More data is needed to support the conclusion.
- The project notebook needs improvement.
- The project display board needs improvement.

Team Criteria:

- A contribution of each team member is clearly evident.
- All team members understand the objective and the results.
- Final work reflects the coordinated efforts of all team members.

Additional Comments:

