SCIENCE FAIR NOTES FOR JUDGES

Thank you for volunteering to judge the science fair. Without you, the judges, we could not have a science fair. Please read through the following notes and thoughts to prepare for your judging experience.

1. Provide a good experience for the students

The Twin Cities Regional Science Fair is more than a competition; it's an educational and motivational experience for the students. The high point of the fair experience for most students is being interviewed by judges!! You are an evaluator, a counselor, a motivator, and a role model with three main ways to communicate with the students:

Behavior: Be genuine and let the students show their stuff -- don't be the judge whose behavior or comment turns a student off science forever!

Interview: Put the student at ease - sit down, encourage conversation…smile! Ask students about their project, show you are interested, and let the student teach you something. It is important for the judge to not show the student how much the judge knows, but rather ask questions to learn what the student knows, especially when judging middle school students. Many of our students (both in middle or high school) are just getting started in science. Remember to ask questions but do not go so far as to make the student feel they don't belong, are not worthy or not smart enough for science. Your questions and comments will make a great difference in the student's future approach to science. NEVER, NEVER, NEVER tell the student that you do not believe that they did the project work. NEVER tell the student that their project is not good enough to be at the fair. Your evaluation will show up in the numeric score.

Feedback: The only written feedback the students will get from you are the comments you write on the comment sheet - please write as many comments as you have time for, especially if a student scored particularly high or low in one or more categories. However, allow enough time to judge ***at least*** 8 projects in either high school or in middle school.

2. Choose the Best, Encourage the Rest!

Examine the quality of the student's work and how well they understand the project & area of study in each category listed on the scoring sheets. Focus on awarding points for things done; not penalizing the student for NOT doing something. How do you choose the best? Here are some key items that experienced judges and mentors often see in an "outstanding" project:

Evidence of substantial background research

Clear hypothesis or design objective

Good use of graphs and tables to present their data

Repeated experiments (done more than once or twice)

Statistical analysis (keep in mind the grade level of the student)

Student understanding of sources of error

IMPORTANT NOTE for new judges: It is TOTALLY ACCEPTABLE to disprove your hypothesis. Watch for scientific method and critical thinking skills.

3. Be consistent with your scoring

Every judge scores a little (or a lot!) differently; however, with our normalization process in place, we are able to minimize those differences between judges and more accurately choose the best project! To make this process work, each judge must judge their OWN projects consistently - don't worry about matching another judge's score! We separate high school scoring (grades 9-12) from middle school scoring (grades 6-8) so you do not need to reflect the difference between a 6th grader and a senior in high school. Be consistent within each division (high school versus middle school). Be sure to go back through your scores after judging all the projects in one session and make sure that your final scores correspond with the order in which you would rank

your projects. Revision of scores is expected (and encouraged!) if it leads to more consistent evaluation of several projects.

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SAMPLE QUESTIONS that you might use during your interview of the students during judging:

To Judge Creative Ability:

Why is this project important to you?
Where did you get the idea for your project?
What did you enjoy most about your project?
Of what value is your project to society?
What problems arose during your investigation? How did you overcome them?
Did you modify any of the procedures you found in literature? Why or why not? Explain why you made any modifications – what they were and why you tried that.
Do your results indicate further study is needed?

To Judge the Research Question or Problem and the Design and Methodology:

What is the purpose/objective of your study?
What are some previous studies?
What are possible sources of error?
What is/are your controls?
May I see your lab or research notebook?

To Judge Execution – Data Collection, Analysis, and Interpretation

Why did you do the statistical analysis you did? What does it mean? (Older students should have an understanding of the use and limits of the statistics used in their project. High school kids should not use t-score for everything… including if they have only 3 sample points!)
How many times did you repeat your tests?
On what did you base your conclusions?
Are there any other approaches you might have taken to your research?
How much time did your study take?
What instruments did you use for your measurements?
Who helped with your project?
Do you think you could continue this project on your own?
What would you do differently if you repeated your work now?
What would you do next? What's the next step?

To Judge the Poster Presentation:

Check to see if the material is organized, with clear graphics and legends
Check to see if supporting documentation is available
Spelling, neatness, grammar correct?

To Judge the Interview Presentation:

Ask questions about the basic science related to the project. (If a student has no concept of what lift is, perhaps they haven't done their homework before designing and testing airplane wings.)
Why is this study important or relevant?
What did each member of a team project contribute to the team effort?
What would you do next if you had more time or wanted to continue?

It's up to each judge to determine how much of this project is the student's and how much is the mentor's or parents…and to only give points to the student's portion. In the case of projects done in a research lab or university, each student who performed their research at a research institution or industrial location will have a form (Form 1C) displayed at their project, filled out by their mentor, detailing the student's contribution to the project. This, plus talking to the student and using your Score Sheet as a guide, will help keep the playing field level between "home brew" and "mentored" projects, yet allow those students who really excel at science to succeed.

Reminder: projects that should move on to state science fair should be scoring 90 and above. Please adjust accordingly. REMEMBER to stay consistent!

****When you get your judging packet, be sure that you are not judging a relative, or close friend, or your student. In fact, it is a good idea to not judge someone from your own lab, or you may not give the student a level playing field compared to the other projects, and it certainly takes away from the experience if the student presents to someone they see on a regular basis.

If you get a project you'd rather not judge, please bring it to the judging table for reassignment... even if we need to reassign only one project from your packet. If in doubt, ASK.

Last bits: Ribbon judges judge independently, not in groups. It gives the students the maximum benefit! Only a few special awards judges judge in groups.

Dress code: casual business. MAKE SURE THAT YOU ARE COMFORTABLE!

Pace yourself... **about 10 minutes a project** (15-20 may be needed for the most advanced high school projects... but the kids should be able to give you a shorter explanation than that!).

Enjoy some dinner! Perhaps talk to some of the other judges, fill out comments, compare scores within your packet, whatever.

We are not using a score summary sheet, so it is up to you to keep track of your own scores to stay consistent in your rating. You will have a score sheet for each project in your packet. **Do NOT give any paper or score to the student.** Turn in the score sheet to the Judges' Table, or enter your scores by logging into zFairs and enter scores and comments directly. DO NOT go home to enter scores. We need the scores before the judges can leave. Most judges just score on paper and turn the papers in when the assigned project packet is done.

Comments: You may leave comments for the students within your login on zFairs – comments may be added after you go home if you took good notes and want to leave comments for your students. Do NOT leave scores of any kind in the comments. PLEASE give each student something they did well, and something to improve (if possible). This is all the student will get back (except for their ribbon and verbal comments during judging), so please write them some comments! The students are SO DISAPPOINTED if they get back nearly blank comments. That is their "life line" to know how to improve. Be constructive and encouraging – but efficient. We don't want to spend 10 minutes commenting on each project.

If a project requested electricity or floor space, they are located along the wall marked "Electricity Row." We have deliberately left a blank space among the projects to indicate that the project is on "electricity row". Do not assume a blank space between projects means "no show". If in doubt, ASK at the judging table.

PLEASE-- when you are done judging your first packet, PLEASE come back and get another packet. We want the high school kids judged 4 to 5 times this year for ribbons, not including special awards, and the middle school kids judged at least 3 times excluding specials awards judges.

We ask that undergrad students judge grades 6-8 or Special Awards only. The minimum requirement we ask from our judges judging high school (grades 9-12) is either a bachelor's degree or 5 years full time experience working in a science or engineering field. If in doubt, ask. We are thankful to our MD, DVM, DDS, & PhD judges! We need your expertise at ALL grade levels. You are impacting our future generation by encouraging them in STEM (Science, Technology, Engineering, Mathematics)!

Another note: Although we tried to give you your category choice, our project quantities do not exactly match our judge base expertise. Therefore, we ask you to be willing to help us out by (if needed) judging some projects that are not in your field. The student should be able to adequately explain their project to someone not versed in the jargon and current issues in the field. Thank you for helping us out with this!

THANKS SO MUCH for helping make this a fun experience for the kids... and a learning experience, too!

See you about 3:30 p.m. on Friday. Parking is free for our event.

We will have the fair NO MATTER the weather. But if in doubt, there will be an announcement (written) on the front home page of our competition website at https://tcrsf.zfairs.com/ by 8:00 a.m. on the Friday of judging.

Judges and volunteers may help themselves at any time to the buffet style food in the Judges Area. The catered food should be available starting about 3:30 or 4:00 on Friday.

THANK YOU! See you Friday!!! A service hours letter is available upon email request to turn in to your employer/school. Please also check to see if your employer will match your volunteer time with a donation. We are an all-volunteer 501c3 educational non-profit!

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