

Cawthron Science and Technology Fair (Scitec Expo): How to be a Good Judge

Being a judge is hard, but it's worth the effort. You are making a memorable impact on the lives of some very talented young people. Some students' perceptions of you could influence their career choices. It is a good idea when approaching a student to introduce yourself and your background. Before starting, please read the judging criteria in your folder carefully, particularly if it is not your area of expertise.

Asking Questions:

- How did you come up with the idea for this project?
- What did you learn from your background research?
- How long did it take you to design the experiment?
- How did you build the equipment/apparatus?
- How much time did it take to run each experiment?
- How many times did you repeat the trials?
- What do you mean by (terminology or jargon used by the student)?
- Do you think there is a use for this in the real world?
- Is there another study you'd like to do?
- Would you change anything about this project?
- Are there any areas that we not have covered which you feel are important?
- Do you have any questions for me?

Your best tool is asking questions and the student should be doing most of the talking. Avoid questions like "Why didn't you do....?" Probing questions are useful to stimulate the thought processes of the student. A solution or extension to the work presented may be obvious to you but the student may not understand why you're asking such a question. When probing, be sure to imply the correct intent, as in "Could you have done...?" or "What do you think would have happened if you had done....?" This phrasing of the question is an invitation for the student to think about the experiment in a different way.

As a judge, students may think of you as an intimidating figure. The more you can dispel this image, the more likely you are to help the student be less nervous, and get a better discussion

Conveying Fairness:

- Spend about the same amount of time with each student
- Listen to the student's explanation of the project
- Use questions to find out more about the project and how it was done –opportunity for student to shine.
- Make sure that one student doesn't monopolize your time. You have to find some way to break the pattern by politely interrupting with a question. The idea is not to stop the student from talking, but to get them to think about what is being communicated.

Guiding the Discussion:

Sometimes you will come across projects in technical areas with which you are familiar but the student just didn't get it - they made incorrect assumptions, missed a key indicator in the data, came up with a false conclusion, or didn't look at or understand some common principles.

You may be tempted to enthusiastically share knowledge while a student stands idly listening. Before doing this, please consider that these students are smart, and the next judge may hear the student parroting back the knowledge you imparted. Try to lead the student toward the right answers, but don't give the answers. If you really feel compelled to make explanations, save them until near the end of the judging time.

If a project is outside your experience, you are still knowledgeable in the area of problem-solving and the scientific method. Concentrate on these aspects, rather than the details of a particular project.

Improving Communication:

- Make eye contact with the student.
- If the student is short and you are tall, stoop, bend, or squat down to lower your eye level if possible.
- Whenever a student shows a good idea, clear chartsmanship, a clever way to get expensive results with inexpensive equipment, or anything you can complement, be sure to use a compliment.
- Use a tone of voice that indicates interest or inquisitiveness, not scepticism or contempt.

Determining the scores:

- The quality of the student's work is what matters, not the amount of work.
- Team projects are judged like other projects. It is the quality of the work that matters (an individual project of equal quality to that of a team project may be ranked higher because of the comparatively greater effort required by the individual).
- A less sophisticated project that the student understands gets higher marks than a more sophisticated project that is not understood.
- Access to sophisticated lab equipment and endorsements from professionals do not guarantee a high quality project (Did the student really understand what was going on?).
- It's okay if the student ends up disproving the objective or hypothesis of the experiment. A nil result is still a valid result.

High marks go to:

- Genuine scientific/technological breakthroughs.
- Discovering knowledge not readily available to the student.
- Correctly interpreting data.
- A clever experimental apparatus/ use of material and processes.
- Repetitions to verify experimental results /logical process from idea to solution.
- Predicting and/or reducing experimental results with analytical techniques.
- Experiments and new technology applicable to the "real world".
- Ability to clearly portray and explain the project and its results.

Low marks go to:

- Ignoring readily available information (e.g. not doing any background research).
- Apparatus (e.g. model) not useful for experimentation and/or data collection not adequate.
- Improperly using jargon, not understanding terminology, and/or not knowing how equipment works.
- Presenting results that were not derived from experimentation (e.g. literature search)

Feedback

Finally, but most importantly... your feedback. Being interviewed by several judges can be quite intimidating for students. Our overall objective is for their experience to be positive, for students to be thrilled by the process and hopefully consider a career or further studies in science or technology.

Please find the element you found best about the project and comment on this. If you have further suggestions, try hard to word it as a positive solution such as "*it would be interesting to further investigate...*" A lot of hard work and effort has been put in to these projects and we hope for them to learn and want to come back next year.