Paul W. Nance
Elementary Science/STEM Teacher Specialist
Jordan School District
Office: Jordan District Auxiliary Service Building
7905 South Redwood Road
West Jordan, UT 84088
Work Phone: 801-567-8175; Cell Phone: 801-244-6479
paul.nance@jordandistrict.org

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Dear Parents and Science Fair Students,

Here is your judging sheet with scores and some comments for you to see which areas can be improved upon. (The original paper will be sent later with more comments in a couple of weeks.)

Many don't know this but more experimentation can be done on the project and recorded in the journal. The journal and display board can be redone to make them more competitive.

Here are some things that can be done right now to make the project more competitive:

- Redo the journal and display board to make them more competitive.
- Do some more experimenting to be recorded in the journal.
- Type up the journal and make sure it follows the scientific method. The more information that is shown in the journal that was done for the project the more impressive the project is. If a computer isn't available, make it as neat as possible.
- The journal should have a lot more information in it than what is on the display board. The display board is only a reflection (summary) of the journal.
- Write as much as possible in the "gathered data" area in the journal. It is most impressive to a judge when there is a lot of data to analyze and draw a conclusion from.
- With the data, create a table to organize the data. (This is not the graph.)
- Make sure the graph matches the organized data on the table. Be sure the graph has a title and the side and bottom of the graph are labeled.
- Make sure there is a good solid paragraph or two that has information in it from each area of research. The paragraphs should have a lot of detail on what was learned. Write more than is known knowledge. Write information that people don't usually know. Annotate places in the paragraph where the information was found.
- Have a lot of background knowledge about the subject. Therefore, do more reading. Make sure you understand what you have written. Judges have the right to ask you anything that is written on the board or the journal. It is imperative that you know the knowledge you have written and are able to explain it.
- Be sure the controlled variables and experimental variable are identified.
- Replicating the experiment at least twice is necessary. Three times is better.
- **The conclusion is the reason for your project.** Don't just write a short paragraph of one or two sentences. Write a conclusion that is a long paragraph that reveals evidence of learning. Make it thoughtful and reasonable, based on the data collected. Write what was found out and why the results turned out that way it did. Also write a connection to the real world to show a real world application.

- Know the purpose of the project and how it can be helpful to you and other people. A science fair project just isn't a project of curiosity. It is a project to answer a question to understand the world a little bit better and putting this knowledge to use.
- Make the display board as creative and decorative as possible but not to make it gaudy. Put on pictures and decorative icons that reflect your project. Use a computer as much as possible for the writing, for the pictures, and for the graph. If a computer isn't available write it as neatly as possible. Proofread and don't scribble out any words. The display board should have the whole scientific method, engineering design, or computer design on it excluding the research. Organize it well so it flows easily from one part to the next.
    - Scientific Method board:
        - clear purpose, hypothesis with why, complete procedure with materials, organized table showing the data gathered, graph with a written analysis, and a well thought-out conclusion.
    - Engineering Design board:
        - Define a need, design requirements, beginning and final designs, materials, building procedure, 1st testing results recorded with analysis, redesigning proof from first testing, 2nd testing results recorded with analysis and so on until it does what it is supposed to do, and a well though-out conclusions.
    - Computer Design board:
        - Define a need, design requirements, beginning and final code designs, procedural page (the code itself), experience in coding the computer, 1st testing results recorded with analysis, redesigning proof from first testing, 2nd testing results recorded with analysis and so on until it does what it is supposed to do, and a well though-out conclusions.
- Three or four judges will talk to you. Practice what you are going to say. Know the scientific method and tell about your project in the order of the scientific method. Answer your questions as best you can, but don't guess if you don't know the answer. Don't read anything off the board. Everything you say should be from memory. Use the display board only as a springboard of what you want to say next. Make it interesting. As you answer the questions, elaborate on the answers. And most of all, show excitement about the project and the findings. People like to listen to excited people.

Write me or call me if you have any other questions.

Good luck,

Paul Nance