

Dear students and parents,

Welcome to the Silver Mesa Science Fair! This packet contains general rules and guidelines to assist you in your research. The rule packets are separated as follows: K-4th, and 5th grade.

K-5<sup>th</sup> grade projects will be judged and the top projects in each grade will be awarded. A judging rubric will be made available.

As 5th grade students are the only ones that can progress to the district and regional fairs, the requirements are more rigorous and in full compliance with the University of Utah Science and Engineering Fair (USEF) rules. Note to fifth grade students: Silver Mesa will be advancing finalists projects to the Canyons School District Science Fair on February 1-2. PRIOR to 5th grade students beginning a science fair project, they need to complete the University of Utah Science and Engineering Fair Safety Paperwork. Please print the form from the PTA website.

The paperwork isn't meant to be cumbersome, but meant to keep students safe. Students should detail their project in the paperwork and get permission from parents and teachers, and others as necessary. Students who do not have this paperwork completed prior to experimentation will not be allowed to participate in the Canyons School District science fair or the University of Utah Regional Science and Engineering Fair.

We are always in need of judges! If you love talking to students, then you are qualified! The rubric is a great guide and simple to follow. If you have at least an hour on the day of the fair, please reach out. You will need to be registered as a volunteer with Canyons School District. Please see the school PTA website with a link to the application.

If you have questions, please feel free to email.

Thank you for your support,

Janet Baer

[janetbaer@gmail.com](mailto:janetbaer@gmail.com)

# Science Project Information Packet

## 5<sup>th</sup> Grade only

Following are the requirements for 5<sup>th</sup> grade projects. As a 5<sup>th</sup> grade student in the Canyons District, our top 5<sup>th</sup> grade class projects will be nominated to the Canyons District Fair for competition, and then could progress to the University of Utah Science and Engineering Fair (USEF). For that reason, we will follow the guidelines set forth by USEF. Please complete and return the attached 3-page USEF project form as soon as you determine your project for pre-authorization from your teacher. Please also consult the USEF web site for available labs and other resources available for your science project: <https://usef.utah.edu/>

Teams of two or three are allowed. Students must be in the same class, this includes color class for dual immersion students.

### Requirements:

1. Clearly defined subject and objective
2. Clearly state hypothesis
3. Signed USEF paperwork BEFORE starting experiment
4. 5 reputable resources (minimum)
5. Journal
6. Experiment that correctly tests the hypothesis or engineering question
7. Data collected from experiment
8. Conclusion
9. Poster

The following items should not be displayed at the school. If you have a project that includes them please take pictures to have on display.

Living Organisms	Sharp items- Needles/Syringes/Glass
Preserved animals (any remains)	Flames or highly flammable materials
Moldy/decomposing food	Drugs, Poisons or Hazardous substances
Food (Human or Animal)	Liquids
Bacteria	Other items inappropriate for school

**Students are not allowed to grow mold or bacteria at home.** Any experiment that begins to decay should be discarded.

\*If you are using human or animal subjects in any experiment you **MUST** have a signed permission slip from the parent of each subject. Unless the subjects are in a public setting, and are unidentifiable and are not being asked to do something for the experiment.

For example:

- Asking friends to play a video game to test if talking on a cell phone reduces reaction time- YES
- Watching the lunchroom to see if boys or girls ate more of their vegetables- NO

## **Recommended Steps:**

### 1. Clear Answerable Question

This is the question that you are asking. Try to keep your subject narrow enough that you have the ability to properly test it. For instance, if your objective is to find out “In what environment do plants grow best?” there are so many variables to be tested that you would have a really hard time properly testing that question. Rather, ask “Do bean plants grow best with water, Sprite or orange juice?” so that the test boundaries are clearly defined.

Here is a 4 question approach offered by the district to facilitate inquiry:

- a) Which materials are available?
- b) What does X do and how does it act?
- c) How can I change the materials to affect the action?
- d) How can I measure or describe the response of X to the change?

Try to keep the subject at a 5<sup>th</sup> grade student level. The student should easily be able to understand the subject matter, test variables and the results of the test.

### 2. Clearly Stated Hypothesis

Make sure that your hypothesis (what you think will happen) is clearly stated. It should read something like “I think the bean plants given Sprite will grow better than the ones given water or orange juice.” There is no harm in being wrong, so be bold and state exactly what you believe will happen.

### 3. Reputable Research (minimum of 5)

Your 5 sources can be books, magazines, websites, documentaries or an interview with an expert in the field they are researching. Please make sure that all resources are reputable. Wikipedia is a good source for credible sources, but it is not considered an original or credible source for information. For this age group it can be helpful, just be cautious of the facts that are stated – they are not always correct. **All sources need to be documented.**

Try to make sure that all the sources are at the student's reading level. The library has lots of wonderful books for all reading levels that can help. Again, the goal is for your student to gain knowledge for themselves, which means materials need to be age appropriate.

### 4. Journal

You should keep a journal of all important paperwork throughout your project. This will help you remember information and where it came from. Dedicate a page or more to each resource. Document the source at the top of the page. Write down what you learned and how it applies to your project. Your journal will also help you keep track of all data received from the experiment. All data, raw and tabulated, should be kept together. The journal should include your results and conclusion. Judges will want to look through your journal and you will reference it when you talk with them.

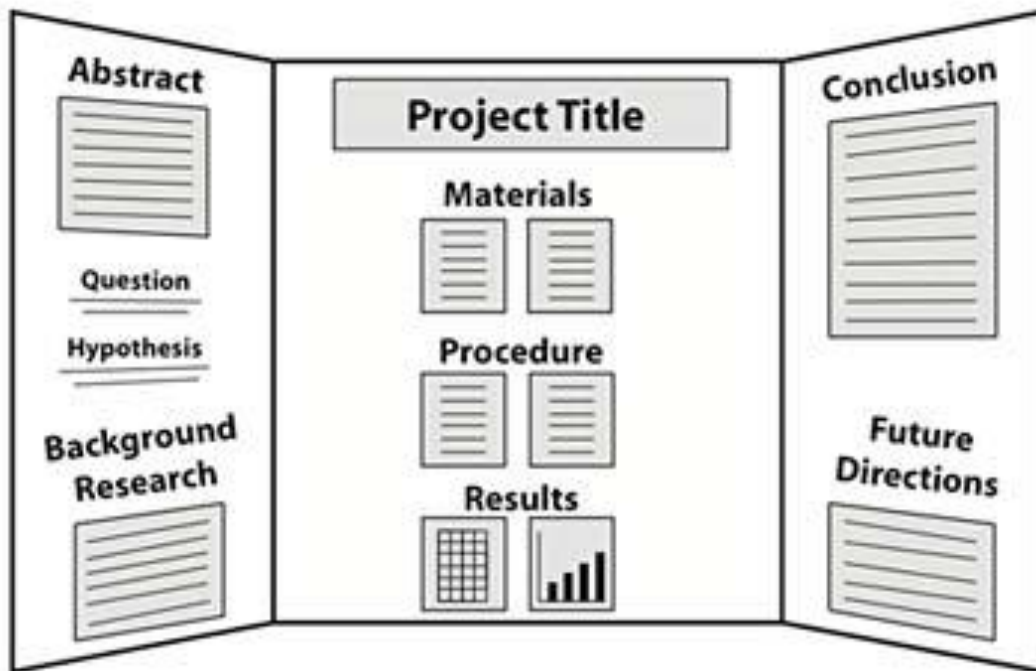
Teams will only need to have one copy of the notebook to accompany their poster, although it is recommended each team member have their own copy to remember their science fair experience.

## 5. Poster Presentation

This should be one of the tri fold posters that can be bought at any craft or office supply store. Your poster should to summarize your project in a clear and neat way, containing the following information:

- \*Title for your project
- \*The hypotheses or the question that the student was answering or researching.
- \*The sources the student used for research
- \* Abstract summarizing important points
- \*Documentation of the hands on experience (photos)
- \*The answer to the question (correct or not) or the conclusion reached
- \*Optional items – Photos, art, graphs, data summary/ results, procedure, materials, etc. Phots should not show the face of any human that is not the student presenting the project. (Put a sticker over other faces if needed.)

Please make sure that your student's name and teacher name are written on the BACK of the poster. Any items that come for display in addition to the poster also need to be labeled.



For ideas/help visit the U of U Science Fairs' "Tips" web page at <https://usef.utah.edu/resource-center/tips-and-advice> or visit the Science Buddies web page at <http://www.sciencebuddies.org/>. If you have any questions please email. We are happy to try and help in any way possible.

Good Luck!

Janet Baer