2022 Science Fair
Student Packet
Revision C

Table of Contents

Overview

The PVES PTA is excited to announce a fun and engaging event across grades, classrooms, and delivery models for the students, parents, and teachers to enjoy together. In the name of Science!

The Science Fair will be a voluntary event for students of PVES. It will be open to students of all grades, and this year will consist of an on-campus fair. Science fair presentation boards will be set up in the lunch area and families will have the opportunities to view and learn from all the projects.

Resources are provided in this document to help students/parents develop projects. Projects will be categorized across science categories:

- Chemistry
- Earth & Environmental Sciences
- Engineering & Robotics
- Life & Animal Sciences
- Math, Computer, Electronics Science
- Physics

This "Packet" is a guideline for a fun Science Fair. We want to keep this simple, straightforward, and most of all...fun! Depending on your student's grade, do as much, little, or more than you like.

Contact pvpenguinspta@gmail.com with all questions or comments.

Science Fair Rules

Aw!, you mean there are rules? Of course there are, silly, this is made by adults!

1. Number one rule. . . think **safety first** before you start. Make sure you have recruited your adults tohelp you.

2. Never eat or drink during an experiment and always keep your work area clean.

3. Wear protective goggles when doing any experiment that could lead to eye injury.

4. Do not touch, taste, or inhale chemicals or chemical solutions.

5. Respect all life forms. Animals are not allowed to be used in experiments. Do not perform anexperiment that will harm a person.

6. All experiments should be supervised by an adult.

7. Always wash your hands after doing the experiment, especially if you have been handling chemicals.

8. Dispose waste properly.

9. Any project that involves animals, drugs, firearms, or explosives are NOT permitted.

10. Any project that breaks district policy, and/or local, state, or federal laws are NOT permitted.

11. Use safety on the Internet! NEVER write to anyone without an adult knowing about it. Be sure to let an adult know about what websites you will be visiting, or have them help you search.

12. If there are dangerous aspects of your experiment, like using a sharp tool or experimenting with electricity, please have an adult help you or have them do the dangerous parts. That is what adults are for so use them correctly. (Besides, it makes them feel important!)

Science Project Steps

1. **Choose a topic**. Be sure it interests you. Do not pick one because you think it will be easy. Talk it overwith your parents and when you have decided, inform your teacher, and do not ask to change your topic later. Complete the Google Form available to register.

2. **State your purpose as a question**. What is it that you want to find out by doing this project?

3. **Research your problem**. Look at any books/websites that might help you, make observations by simplylooking at things, talk to people, and find out as much as possible about your topic. Write down any ideas you have and where you got them. Also, keep note of all information needed for citing your resources.

4. **Form a hypothesis**. What do you think is going to happen? Based on what you know or found out from step #3, what do you think the results of your experiments will be? After doing the experiments,it may turn out that your guess was wrong. It is okay if this happens.

5. **Plan your project**. How will you test your hypothesis? What experiments will you do? How will you measure the results? Where will you keep your information? Be sure to keep notes and write down everything you do and what happens.

6. **Collect all your materials**. Find a place to keep things where others will not bother them. Let other family members know what you are doing so they do not throw your materials away by mistake.

7. **Conduct your experiments**. Remember, the more times you do an experiment the more reliable and accurate the results will be. Do each experiment at least three times and get an average of the resultsfor your graph. Use something to measure your experiments: a ruler or yardstick if you are measuringdistance, a clock to measure time, etc. Check the measurements to be sure you are correct.

8. **Record your data**. As you do your experiments, you will want to write down what you saw or foundout. Organize this information in an orderly manner. Put the date, time, and any other useful information. Write your measurements clearly.

9. **Draw conclusions**. What did you learn from your experiments? Have you proved or disproved yourhypothesis? You made a guess about what you thought would happen. Now tell what really did happen. You don't lose points if your guess turned out to be wrong.

10. **Prepare your titles, charts, graphs, drawings, and diagrams**. Make them large enough to see, neat, andcolorful.

11. **Construct your science fair display**. Get your cardboard display board from your teacher so you can show all your work and have your hands free to point to sections when you give your presentation.

12. **Plan a time line** so you don't leave everything until the last minute. If you need help, tell your parentsand your teacher, the earlier the better.

13. Relax and Enjoy yourself. You will do a GREAT job!

Suggested Timeline

Choose a Topic and Sign Up	**ASAP!**
Research and form a hypothesis	1 week
Plan and Collect Materials	1 weeks
Conduct your experiments and collect the data	1-2 weeks
Conclude and prepare your report and presentation	1 week
Science Fair Presentation night!	**May 12, 5:45pm**

Science Fair Display Board

The display board is a summary of everything that you did to investigate your topic. The display board provides others with vital information on what your project is about as well as its effect on your understanding of the topic.

The following are guidelines. Depending on the grade of the student, you can do as much as you are able to accomplish. Following this list, there is a simpler form for the younger students to use.

All display boards for a science fair project should include:

Title of your Experiment: The first page in the report should include the title of the project as well as the name and grade of the student.

Statement of Purpose: State the purpose of the project **in the form of a question.**

Hypothesis: You must have a hypothesis before you complete the project. A hypothesis is an educated guess about what you think will occur as a result from completing your experiment.

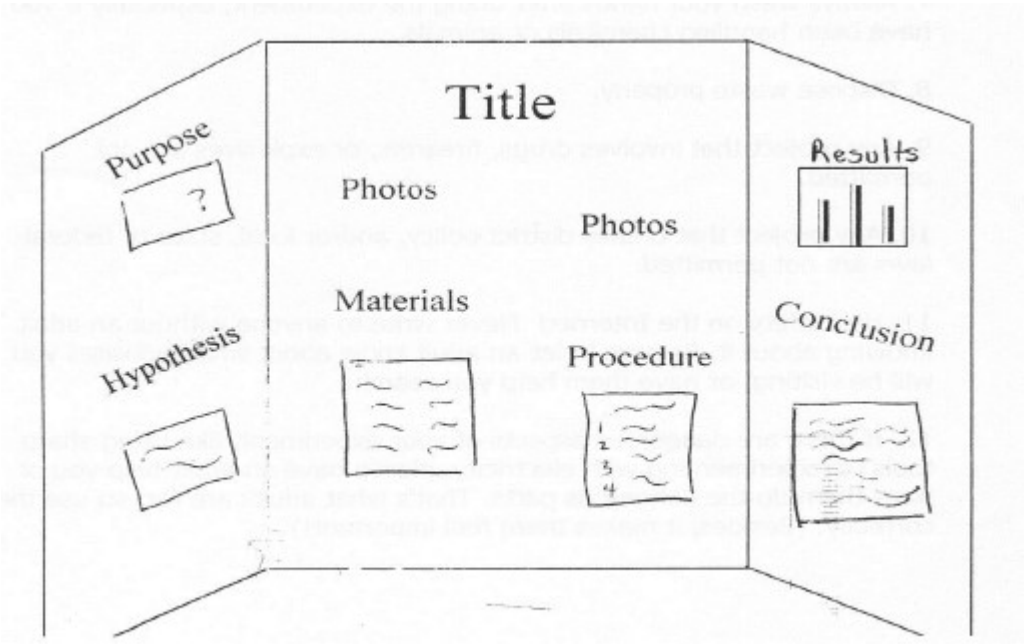
Materials: This is a list of all the materials and supplies used in the project. Quantities and amounts of eachshould also be indicated.

Procedure: You will list and describe the steps you took to complete the project. Usually this is listed in a numbered sequence. This part shows the stages of the project so that another person can carry out the experiment.

Observations and Results: In this section, you will tell what you learned from the project. It is also IMPORTANT to include all graphs, charts, or other visual data (pictures) that helps to show your results.

Conclusion: This is a brief statement explaining why your project turned out the way it did. You should explainwhy the events you observed occurred. Using the word "because" is a good way to turn an observation into a conclusion. The conclusion should tell whether the hypothesis was proven or not proven. Also give the reason(s) why you chose to learn more about the subject. You could also add what you know now that you didn't know before you completed your project.

Below is an example of the trifold Project Display Board. The display board may be purchased at Michaels, Walmart or Target. This is just a sample, feel free to create your own layout and design but be sure to include all the necessary sections so other students and their families can learn from your project.



Science Fair Websites

1. **California State Science Fair:** Read about this science fair which has been going on since 1952! You canlearn how to enter, get help with your own project, or see a directory of past projects. http://www.usc.edu/CSSF/

2. **Science Buddies:** Use the topic selection wizard to help you figure out what science projects interest youmost. Once you have a topic, get help doing research, setting up the experiments, and completing them. http://www.sciencebuddies.org/

3. **Science Fair Project Resource Guide:** Samples, ideas, magazines, resources, and more. Includes a list ofsites that explain the Scientific Method. http://www.ipl.org/div/kidspace/projectguide/

Please feel free to research on your own age appropriate science fair projects. There are so many wonderful ideas!

Don't forget the most important thing…

The science fair is supposed to be something fun—not stressful. Choose a topic that interests your student and let them take the lead. Projects and display boards are NOT going to be graded or judged. The hope is that this will help our Penguin Scientists explore and learn something new.