

# 2020 Folsom Hills Elementary

## Science Fair

All projects must involve an experiment that uses the scientific method.

Remember a science fair project is a test you do to find an answer to a testable question. It is not just a demonstration showing what you know about something.

- ❖ There are websites and books within the school and public library to help you find an idea.
- ❖ Be careful because some activities are listed as experiments but in actuality are not. Be careful not to choose a demonstration--find something that is "testable" and will use the scientific method.
- ❖ What are the steps of the Scientific Method? Scientists use the scientific method to find answers to questions and to solve problems. Although there are many different versions of it in use today, you will find that what they are really based on is making observations, asking questions and looking for answers to questions through science experiments. In order to use the scientific method to find answers to your own questions, you will need to: 1) Make Observations 2) Do Some Research 3) Form a Hypothesis (guess the outcome) 4) Test Your Hypothesis and 5) Draw Conclusions
- ❖ Have fun!! 😊

The Science Fair will be  
**March 18, 2020**  
in the cafeteria

Dear Families,

Thank you so much for your support in your child's interest to participate in our 2018 Science Fair. To prepare you for this exciting adventure, I put together a packet of materials that you may find useful. On the last page you will see the rubric that the judges will be using at the Science Fair. Please refer to this as your child conducts their experiment so they can make sure to stay on the right path. Children naturally want to demonstrate something (think exploding volcanoes 😊) but the purpose of our Science Fair is to allow students the opportunity to work through the Scientific Method (see next page).

### NINE WAYS FOR FAMILIES TO HELP 😊

1. Read this packet with your child.
2. Assist your child in finding a project that is interesting, *challenging based on his/her ability level*, and possible to complete in the time available.
3. Discuss the plan for the project with your child. Help her/him to understand the procedures that need to be followed.
4. Take your child to the library or help them use the Internet as needed.
5. Point out the importance of accurate observations and careful record keeping.
6. Supervise the use of tools, chemicals, or other hazardous materials.
7. Give lots of encouragement along the way.
8. Discuss ways to display the project.
9. Encourage your child to make clear, neat lettering for the display so that others will clearly understand the science project.

### SOME DO NOTS FOR PARENTS 😞

1. Don't do the project for your child.
2. Don't let your child wait until the last minute to start planning.
3. Don't let your child think the project is a failure if it doesn't work out as expected. That is what an experiment is all about!

# **The Scientific Method**

## **Question/ Problem**

State the question or problem you are wanting to test.

## **Hypothesis**

What is your prediction?

## **Experiment**

Conduct an experiment to test your hypothesis.

## **Results**

What happened during the experiment?

## **Analyze Your Data**

What do you think about your findings?

## **Conclusion**

What did you find out?

# STEPS TO PREPARE AN EXPERIMENT

## 1. Select a Topic or Question:

Remember a science fair project is a test you do to find an answer to a question, not just showing what you know about something. It is not just a demonstration. Judges will be looking for use of the scientific method.

## 2. Gather Background Information

Helpful Internet Sites (be careful to select an experiment. There are some that are demonstrations)

<http://www.sciencebob.com/sciencefair/ideas.php>

<http://www.sciencefairadventure.com/>

<http://www.all-science-fair-projects.com/category0.html>

<http://www.ipl.org/div/projectguide/choosingatopic.html>

<http://school.discoveryeducation.com/sciencefaircentral/?campaign=SFC>

<http://www.factmonster.com/spot/science-projects-earth-sciences.html>

<http://www.energyquest.ca.gov/projects/index.html>

[http://www.sciencebuddies.org/science-fair-projects/recommender\\_register.php](http://www.sciencebuddies.org/science-fair-projects/recommender_register.php)

## 3. Run a Controlled Experiment and Record Data

- Your controls are the things you are keeping the same.
- Your variables are the things you are changing or experimenting with.

## 4. Graphs, Charts, or Pictures

Show what happened during your experiment. Taking pictures or saving materials makes the display board more interesting. The graphs, charts, and pictures are your results.

When using a picture on your science board, you might want to include a caption. Graphs should include a title, key, scale and have their x-axis and y-axis labeled. Materials from your project should have information next to them to explain what they are.

## 5. Put it all together on the 3 paneled display board!

The purpose of your display is to explain your project. Content, or the information on the board, is the most important thing since it is what the judges will be reading the day of the fair.

Display boards should be neat and easy to read.

It is fun to make your board fun & colorful, but be sure that people can understand what you did.

In front of the display board, it is fun to set up some of the materials or results from your experiment (if possible).

The title is very important in a display board. It should be eye-catching and easy to read. Be sure that the letters are large enough to read.

**\*\*\*Here is an idea as to how students could set up their board. This format is not mandatory, simply a suggestion 😊**

Left panel	Center Panel	Right panel
A <u>Testable</u> Question: (This questions should not have a yes/no answer.)	A Title	Results – What was the outcome of your experiment? What worked and what didn't work?
Hypothesis (Your educated guess as to what will happen.)	Materials Used  Procedures/Steps (If you take pictures as you complete the steps, you may include them here. Your pictures should include captions). Be very specific on all the steps you took. Someone else should be able to take your steps and repeat your experiment. Your procedures/steps should include measurements of some type. (It might be time, height, % changed, temperature, etc.)	Graphs showing the final results (graphs need to include a title, a key, a scale, the x-axis and y-axis must be labeled)
Variables (what changes)		A Conclusion – Was your hypothesis right? If not, what could you try differently? What did you learn about this subject? What did you learn from completing this project?
Control (what stays the same)		

**Another suggestion, before you begin, is that the student may plan out their board ahead of time. It might be best to not start gluing until after you have planned it out.**

*Below is a suggestion to help your student focus their ideas and findings before, during and after Scientific Method's process. (It is not mandatory to complete this form)*

**Project Title:**

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**Your**

**Question:**

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**Your**

**Hypothesis:**

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**Procedures (list the steps need to complete the experiment):**

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**Your Variables: (What is changing)**

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**Your controls: (what is staying the same)**

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## Science Fair Project Rubric

Student: \_\_\_\_\_

Grade: \_\_\_\_\_

Project Title: \_\_\_\_\_

Category	Points Possible	Points Received
Question - Is there a testable question? (Remember it should not have a yes/no answer.)	12	
Hypothesis - Is there a testable hypothesis?	12	
Variables - Are variables listed?	5	
Control - Is a control identified?	5	
Title - Is a creative title given?	5	
Materials - Are all the materials listed?	10	
Procedures/Steps - Are all the steps listed? Are the steps detailed? Are the steps in order? Is some form of measurement included?	12	
Results - Are the results of the experiment explained?	10	
Conclusion - Is a conclusion included that discusses the accuracy of your hypothesis? Did you talk about how you could change your experiment to improve it? Did you include what you learned about your subject? Did you include what you learned from doing this project?	14	
Neatness/Visually Appealing	5	
Oral Presentation - How clearly is the information presented? How knowledgeable is the presenter?	5	
Oral Presentation - eye contact (be sure not to just read off your board), posture, loudness, accuracy of pronunciation of words	5	
<b>TOTAL SCORE</b>	<b>100</b>	