



## MONTE VISTA ELEMENTARY SCHOOL

### MONTY'S SCIENCE FAIR: March 31<sup>th</sup>, 2017

The last day for signing up is March 15<sup>th</sup>, 2017: teachers will distribute the sign up sheet in January.

### INFORMATION PACKET

**To sign up:** ask your teacher for the sign up sheet or send it by email to [dsalinas@chla.usc.edu](mailto:dsalinas@chla.usc.edu). Please read this information packet for more details.

In summary, students will have the option to participate in 3 different categories: research project, demonstration, and report.

**Research:** research projects will be judged by the best use of scientific method and quality of oral presentation. This category will compete for first and second prizes in each grade level (K, 1, 2, 3, 4, 5, and 6). If your child would like to compete, please make sure he/she follows the Scientific Method: Question→hypothesis→proposed solution→results→conclusion.

**Demonstration:** demonstration projects will be judged based on "the most original and elaborate." This category will compete for first and second prizes in each grade level (K, 1, 2, 3, 4, 5, and 6).

**Report:** report projects are encouraged if your child does not want to compete, but still wants to learn about science. This category requires a poster or display, but it does not require oral presentation.

**Students will have to reach a minimum score of 60% to qualify for first or second place.** Students can work in groups (maximum of 4 students per group) or individually. Parent involvement is encouraged to mentor, guide, and assist the students to develop their projects. **Assist as needed, but let your student do the work.** How much the student learned from doing the project will transpire on how well he/she presents and answers questions. Please open attachments for rubrics.

# HOW TO GET STARTED ON YOUR SCIENCE FAIR PROJECT

## 1. HOW TO START

Choose your topic: get ideas from your teacher, parents, friends, science books, newspaper articles, television, Internet, etc. Collect and put together your ideas and materials you will need. Follow the Scientific Method as much as possible.

### TYPES OF SCIENCE FAIR PROJECTS

- A. Report projects are the easiest types of projects to do, as they simply require that you read various written materials and write a report. It's really no different from other kinds of school book reports. Here are some sample topics for report projects:

Electricity	Dinosaurs	Whales	Light Bulbs	Plants
Tooth decay	Ants	Rockets	Clouds	Glass
Volcanoes	Fingerprints	Erosion	Astronomy	Clocks

- B. Demonstration Projects take the report project one step further. In addition to reading and writing, you are putting together a collection, performing an experiment, or constructing a model or device. Here are some sample demonstration projects:

<u>Collections</u>	<u>Experiments</u>	<u>Model or Device</u>
Minerals	Water purification	Incubator for hatching eggs
Rocks	Film developing	Model steam engine
Sea shells	Plant growth	Lie detector
Local soils	Animal nutrition	Burglar alarm
Plants	Conduct of electricity	Reflector telescope
Seeds	Production of sound	Seismograph
Spider webs		Camera
Bird nests		Thermometer

C. Research projects are investigations designed to answer questions. Here are some sample research project topics:

What dog food does my dog like best?

Which detergent cleans best?

How do temperature changes affect crystal growth?

Can I grow plants in water? In sand?

Which boils faster: salt water or fresh water?

### **Guidelines for Choosing a Project**

Here are some things to consider when you are CHOOSING a project.

- Have you been to the library to see if there any books available to help you select an interesting and challenging project?
- Can you finish the project you want to do in the time you have available?
- Is your project part of a larger idea? (You don't want your project to be too big!)
- Can you do your project without too much help from other people?
- Are you going to learn something from your projects?
- Do you have the skills and knowledge to complete your project?
- Can you afford to purchase all of the supplies necessary to complete your project? (If not, you might want to consider borrowing materials.)

### **Guidelines for Completing Your Project**

When working on your project, there are things to keep in mind.

- Make sure that you follow the Safety Rules. These rules are listed in this Information Packet.

- Make sure that you have the materials necessary to complete your project.
- Develop a timetable and stick to it.
- Keep notes about what happens, both good and bad things. Be accurate - if you have to take measurements, make sure they are correct. In other words, make sure that your results come directly from the data you have collected.
- Make sure that your finished project is neat and that every word is spelled correctly.

### **Getting Help from Other People**

- If you are having difficulty finding the right kinds of books at the library, be sure to ask the librarians. They are always happy to help.
- Talk to your parents and teacher about your project. They may have some good advice.
- If you get help from other people, be sure to thank them for their help. Also, make sure that you mention in your report how these people helped you.
- We have some parent volunteers who have technical background in a variety of fields. You can ask your parents to contact them for some advice.

### **HOW TO DO YOUR SCIENCE FAIR DISPLAY**

Your experiment should be placed on a display board that stands by itself, such as on a three-sided display, as shown below. It should not be over 36 inches wide when open and write your name and teacher's name on the back.

Example of display layout:

1. Questions: What do you want to find out?
2. Background: What do you know already? Give the information you find from talking to people, reading books, and any other sources.
3. Hypothesis: What do you think will happen? Make your own guess about what you think the answer is.

4. Procedure: Show and explain each of the steps you followed to do your experiment. DO NOT leave out any of the steps you took to complete your experiment. Describe what you did, and identify the supplies. Use pictures, charts, photographs, and diagrams to help people understand the steps you took.
5. Results: Explain what happened when you performed your experiment. Show all of the data you collected in charts, graphs, pictures, or diagrams.
6. Conclusions: Explain what you learned by doing your experiment. Be sure that your conclusions answer your original question.



### What is the Scientific Method?

The scientific method refers to the process that scientists go through when solving a problem. It involves the following steps:

1. State the Problem: Write the problem clearly, perhaps in the form of a question.

2. Present a Hypothesis: Describe your educated guess of the possible solution (your prediction of the outcome of your experiment) and justify your reasoning.
3. Present a Procedure: Describe how you will go about solving the problem. Include a list of all the materials needed. Do the experiment.
4. Present the Results: Tell what happened in words. Show what you have found out using tools like charts, tables, graphs, diagrams and pictures.
5. State your conclusions: Write a paragraph that tells whatever the experiment solved your problem. Did it prove or disprove your hypothesis? If your hypothesis was incorrect, what might be some of the reasons?

## **MONTE VISTA PTA ELEMENTARY SCHOOL PTA SCIENCE FAIR SAFETY RULES**

### **USE OF ANIMALS:**

- ✓ If you use animals, make sure you take proper care of them. They should not be harmed or abused.

### **FAIR DEMONSTRATIONS:**

- ✓ Carefully pack all materials when transporting to and from the Fair.
- ✓ No live animals may be exhibited at the Fair. Use models, stuffed animals, or photographs instead.
- ✓ No human body parts may be exhibited, with the exception of teeth, hair, and nails.
- ✓ No controlled substances may be exhibited.
- ✓ No smelly, dangerous or combustible chemicals may be exhibited.
- ✓ Rockets or engines must not contain fuel.
- ✓ All chemicals displayed should have the contents clearly marked on the container.
- ✓ No open flames will be permitted.

- ✓ Expensive or fragile items should not be displayed. Valuable items essential to the project should be simulated or photographed.
- ✓ Collections can be protected with a covering of plastic wrap.
- ✓ Items to be displayed in front of a backboard should be adequately secured. (i.e., batteries, wire switch, and motor should be secured to a piece of plywood and placed in front of the backboard).

### **STANDARD SAFETY PRACTICES**

- ✓ Students conducting experiments should wear safety eye goggles, if necessary.
- ✓ Standard safety practices should be followed when working with fire, hot liquids, or caustic chemicals. Parental approval and supervision may be required for these materials.
- ✓ All projects using household electricity must conform to standard wiring practices and safety.

### **TIPS FOR PARENTS**

1. Be positive about your child's work.
2. Be honest with your child. If you don't know the answer, tell your child that you don't know, but offer to help locate a source of information that may help.
3. Help your child look around for ideas. Investigate, libraries, Internet, etc.
4. Help seek out people to help - other adults, teacher, other professionals. We have some volunteer parents with science and technical backgrounds who are willing to mentor our students!
5. Help your child collect and save materials. Inexpensive materials found around the home often work the best.
6. Allow your child to "mess around" with materials without your intervention.

7. Allow your child time for thinking, exploring, and doing the experiment.
8. Stress "how-to" skills - e.g., observing, rather than memorizing facts.
9. Examine issues with moral consequences - e.g., animal used for experimentation.
10. Help your student keep a daily log of their research activities.
11. Go to the Science Fair and take pictures of experiments for future ideas.
- 12. Assist as needed, but let your student do the work.**

Contact information for questions and assistance:

Mrs. Danieli B. Salinas - [dsalinas@chla.usc.edu](mailto:dsalinas@chla.usc.edu)

ONLINE RESOURCES:

<http://www.sciencebuddies.org/science-fair-projects/>

<http://www.education.com/science-fair/>

<http://www.sciencefair-projects.org/>