Kiwanis & YMCA of Oroville Science Fair Application

Student's Name: _____

Home Address: _____

Parent / Legal Guardian: _____

Home/Cell phone: _____

Tee shirt size S___ M___ L___ XL___ XXL___

Grade: _____ Exhibit Information Project Title:

_____

Will electricity be required to display your project? _____ yes _____ no

As parent/legal guardian, I am aware of my child's participation in the science fair. No unknown substances, food, insects, or cultures will be displayed. All items will be labeled, approved, and in sealed containers if needed. NO inhumane treatment to animals will be used.

_____ Parent/guardian signature

Return to PO BOX 2092 Oroville, CA 95965

Important Items and Dates

- ✓ All participants must complete an application
- ✓ Applications are due by 01-16-23
- ✓ Projects must be completed by 03-24-23
- ✓ Judging will take place on 03-25-23
- ✓ Awards will be presented at 03-25-23

Kiwanis & YMCA of Oroville Science Fair Handbook

What is a Science Fair?

A science fair is a place for students to present their science projects to professionals and to the community. Its main purpose is to get you excited about science by doing it rather than simply learning about it. A scientist first asks a question about some aspect of the world and then tries to find its answer. At the science fair, each student presents a project, both visually and orally, with the question and answer displayed in an interesting way. Students should be able to explain their projects and answer questions.

What do I need to do for the Science Fair?

Each project must have an exhibition that includes:

A. Tri-fold poster
B. Oral presentation (2-4 minutes)

The exhibition may also contain:

C. Physical models
D. Computer program
E. Demonstration
F. Special apparatus
G. Logbook or journal

What should the trifold poster include?

A short report that contains:

H. *Introduction*: Background information on your topic, why you chose this topic

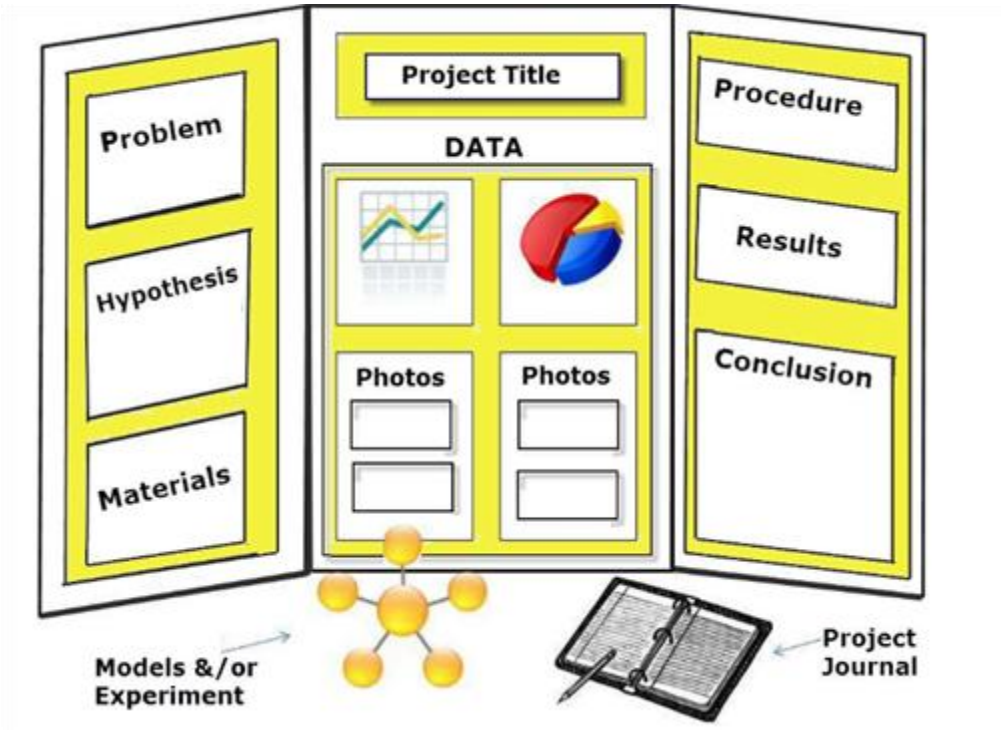
I. *The question*: What is the question you set out to answer? Include your hypothesis (for experimental projects) or statement of purpose (for invention/engineering/computer projects).

J. *Materials and methods (procedure):* How did you try to answer your question? Explain the materials you used and how you conducted your experiment or how you planned and built your invention/design.

K. *Results:* Show and explain your observations and results (include graphs, charts, tables, drawings or photos). Include your original logbook or journal with your project at the fair!

L. *Conclusions*: What did you conclude about the question you investigated?

M. *Bibliography*: List any references or sources if you did research.



SCIENCE PROJECT STEPS

1. Choose a topic. Be sure it interests you. Don't pick one because you think it will be easy. Talk it over with your parents and when you have decided, turn in your application
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 simply looking 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 won't bother them. Let other family members know what you are doing so they don't 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 results for your graph. Use something to measure your experiments: a ruler or yardstick if you are measuring distance, 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 found out. 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 your hypothesis? 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, and colorful.
11. Construct your science fair display. Get your cardboard display board so you can show all your work and have your hands free to point to sections when you give your presentation.
12. Prepare and practice your presentation. Be able to talk about what you used, what you did in your experiments, and what you found out. Know it well enough that you don't have to read it from the display.
13. Plan a timeline so you don't leave everything until the last minute.
14. Relax and Enjoy yourself. You will do a GREAT job!

Your Science Fair Oral Presentation

A lot of kids fear speaking in public or to a judge. Just imagine they are a fellow scientist who just wants you to share what you learned.

Relax, smile, and have fun. Remember, you are the expert and you had fun doing the project. But if you are a little nervous, we listed some things that you need to do during the presentation.

Helpful Hints:

- Look sharp, feel sharp, and you will be sharp. Dress nice that day, be polite, and speak clearly. You will how that you have confidence. Don't forget to look at your audience.
- Introduce yourself. Point to the title of your display. Tell your audience why you chose to study this.
- State your problem that you studied (your question.) Tell them about your hypothesis (what you thought might happen.)
- Talk about what you learned while researching your topic.
- Talk about the sources (books, websites, and interviews) that helped you understand your topic.
- Tell about your project and explain the steps you took to conduct your experiment. Be sure to mention all the materials involved and point out the pictures that you may have taken.
- If it applies, be sure to show them that you tested your experiment at least 3 times.
- Show them all the cool graphic organizers that you made, like your tables and charts. Remember to point out the labeled parts of your graph or table to show that you know what it represents.
- Be sure to explain what your data means. Make sure you can read your graphs and tables. Let them know if you were surprised by the results, or if you knew what would happen because you studied about it.
- Make sure you sound like an expert on your topic. Always use the appropriate vocabulary especially by using words from the Scientific Method, like: Problem, Hypothesis, Procedure, Results, and Conclusions.

Judging Criteria and Awards

- Students in grades 5-8 are included in the formal competition.
- A first prize and, potentially, additional prizes will be awarded in each grade from grade 5-8.
- Home-built models carry more weight than commercial kits.
- Judging criteria (more detailed criteria for the Middle School Science Fair are below):

    A. Scientific Approach
    B. Knowledge of Project Area
    C. Thoroughness
    D. Written Records and Reports
    E. Ingenuity and Creativity
    F. Visual Presentation

- **Scientific Approach (possible 25 points)**
    A. Did the student start with a clearly stated hypothesis or statement of an engineering goal?
    B. Was the student orderly and logical with the setup and follow-through of the project?
    C. Were the student's conclusions consistent with the data he or she collected?
- **Knowledge of Project Area (possible 20 points)**
    A. How effectively did the student conduct preliminary research?
    B. What was the extent of the student's knowledge of material related to the project?
    C. Was the student aware of both the scope and limitations of the project?
- **Thoroughness (possible 20 points)**
    A. Did the student do sufficient research in the literature before starting the project?
    B. Was thorough use made of data and observations?
    C. Was the original plan successfully followed through to completion?

- **Written Records and Reports (possible 15 points)****
    A. Did the student keep an original handwritten, bound logbook with all plans, procedures, observations, and conclusions for failures as well as successes?
    B. Did the student put together an accurate written report, complete with a bibliography?
- **Ingenuity and Creativity (possible 15 points)**
    A. Was the explanation of the project clear and precise?
    B. How well did the student use his or her materials in the solution of problems?
    C. Did the student present any new or unique ideas?
- **Visual Presentation (possible 5 points)**
    A. Was the project displayed in a logical and organized manner?
    B. Were charts and graphs used where needed?
    C. Did the display and posters effectively convey the message in an understandable manner?

- **Please make sure you have a logbook or journal.

General Safety Rules

- Do not hurt or scare people or animals, including yourself, as part of an experiment.
- Do not publish the names of your subjects.
- Do not use dangerous materials in your project except in very special situations when you get permission from the coordinators. Ask advice about this from your parents or the organizers.

What can I not use or bring to the science fair?

Students' Science Fair projects may not involve, at any stage of the project, the following:

- Blood products, fresh tissue, skin, teeth or bodily fluids
- Nonhuman vertebrate animals and their parts, exception unfertilized eggs shells
- Ingestion, absorption or inhalation of any substance by human subjects (no smelling/wafting or eating/chewing of ANYTHING)—NOTHING in or on parts of mouth or skin—including but not limited to teeth, tongue, lips.
- Pathogenic agents*
- Recombinant DNA
- Carcinogenic or mutagenic chemicals
- Compressed gas (exception: helium, CO2, air, purchased for home use)
- Controlled substances*
- Explosive chemicals
- Hazardous substances or devices (including, but not limited to BB guns, paint ball guns, potato cannons, air cannons)
- High voltage equipment
- Highly toxic chemicals
- Lasers (any strength) exception: infrared thermometer with Supervision Form D
- Ionizing radiation X-rays or nuclear energy
- Radioactive materials
- Composting

*FURTHER EXPLANATIONS

Controlled Substances:

Controlled substances, including DEA-classed substances, prescription drugs, alcohol and tobacco are not allowed.

Pathogenic Agents:

Pathogenic agents are disease causing, or potential disease-causing organisms such as bacteria, viruses, fungi, mold and others.

- Organisms collected, isolated and/or cultured from any environment (e.g., air, soil, water) are considered potentially pathogenic and experiments using these procedures will not be allowed. All plant projects must use sterile, bagged potting soil.
- Raw or partially processed human/animal waste is considered to contain potentially pathogenic agents.