

GRCS Science Fair 2012

Information Packet (K-12)

(All students in Earth Science, Biology, Integrated Science, and Chemistry are required to complete a Science Fair project)

RULES FOR ENTRIES

- **STUDENTS MUST PAY \$5.00 SIGN-UP FEE**
 - Students will receive:
 - Science Fair Information Packet
 - Science Fair Lab Notebook
 - Science Fair Display Board
- **PROJECTS MUST BE INQUIRY BASED AND EXPERIMENTAL IN NATURE** Projects must focus on a scientific question and that can be answered by an analysis of Data.
- **PROJECT PROPOSAL FORM MUST BE COMPLETED AND APPROVED BY STUDENT'S ASSIGNED TEACHER OR MR WYRICK.**
- **MONDAY, DECEMBER 12, 2011 - INFORMATION PACKETS WILL BE AVAILABLE ONLINE ON THE SCHOOL WEBSITE AND AT THE OFFICE.**
- **TUESDAY, FEBRUARY 9, 2012 - IS THE LAST DAY TO TURN IN APPROVED PROPOSALS AND \$5.00 SCIENCE FAIR FEE.**
- **TUESDAY, MARCH 27, 2012 - PROJECTS SUBMITTED TO THE SCIENCE DEPARTMENT**
- **THURSDAY, MARCH 29, 2012 – GRCS SCIENCE FAIR 4:00-7:00**

• **ENTRIES MUST FOLLOW GUIDELINES BELOW:**

- All projects must be experimental in nature
- **NO name may show on any part of the front of the exhibit**
- Maximum width 48" (122 cm)
- Maximum depth 30" (76 cm)
- Maximum height 6' 6" (198 cm) (from table top)
9' (274 cm) (from the floor)
- No vertebrate or live animal research projects will be permitted unless plan is specifically authorized by a qualified animal veterinarian.
- No preserved animals or parts may be exhibited. Photographs may be used.
- No illegal or controlled substances may be used in the students' projects. These items include alcohol, medicines (over the counter or prescribed).
- No human parts may be exhibited except teeth, hair and nails.
- No explosives, firearms, hazardous or combustible materials will be allowed.

GRCS Science Fair 2012

TIMELINE

- 12/12/11 Announcement to teachers and students.
- 1/20/12 Deadline to sign-up for science fair
Pay \$5.00 sign-up fee
Pick up Science Fair Project Proposal Form
Pick up display board
Pick up Project Log notebook
Pick up Science Fair Information Packet
- 2/9/12 Deadline for **approved** Project Proposals
- 3/27/12 Projects submitted – students bring projects to the Eureka classroom on the main campus any time between 9:00 A.M. and 3:00 P.M.
- 3/29/12 GRCS Science Fair 4:00 – 7:00
(Projects must be removed by 7:30 P.M.)
ANYTHING LEFT AFTER 8:00 P.M. WILL BE DISCARDED

GRCS Science Fair 2012

General Information

- **DIVISIONS**

- Life Science
 - Botany
 - Forensic Science
 - Human anatomy
 - Human physiology
 - Zoology
 - Bacteriology
 - Fungi
 - Virology
- Earth Science
 - Geology
 - Meteorology
 - Oceanography
 - Energy Resources
 - Astronomy
- Physical Science
 - Electricity
 - Forces and Motion
 - Heat (Thermodynamics)
 - Solar Energy
 - Chemistry
 - Biochemistry
- Medicine and Health
 - Allergies
 - Dermatology
 - Diseases
 - Nutrition

- **CATEGORIES**

- **ONLY EXPERIMENTS WILL BE ALLOWED**
- **Experiment** – the results of using scientific process to problem solve a question from the life, Earth, or physical sciences

- **GRADE LEVEL PARTICIPATION**

- K-3 Individual or class project
- 4-6 Individual or team* project
- 7-8 Individual or team* project
- 9-12 Individual or team* project

- **COMPOSITION OF TEAMS**

- Projects can be individual or a team up to 3 students in the same grade level.

Science Project Proposal

Student's Name _____

Project Title (Write as a question) _____

Project **DOES*** **DOES NOT** (circle one) involve vertebrate subjects

DOES* **DOES NOT** (circle one) involve human subjects

DOES* **DOES NOT** (circle one) involve DNA, quarantined plants or animals, or lasers

*If project involves any of the items listed above a Special Research Certification form must be completed and signed.

Describe what you plan to show by doing this project: _____

What materials will you need? _____

Briefly describe the type of experiment you think you will do to answer your question.

I am aware of my child's science project

Parent Signature _____

Do not write below this line. *Teacher use only.*

Science Fair Proposal form completed correctly **yes no**

Project approved **yes no**

Date _____

Teacher's Signature _____

Science Project Abstract

Student's Name _____

Project Title _____

Problem (question) and Hypothesis:

Materials and Procedure:

Results:

Conclusion:

Help received in doing your project:

To All Science Fair Teachers of Kindergarten through 12th graders

Ask your class students (5th through 11th grades) or yourself (Kindergarten through 4th) these questions. Because the number one rule in science is Safety First, if you answer "YES" then the attached form needs to be filled out in the appropriate areas.

1. Does your project involve asking your friends or other people questions?
2. Are there experiments on you?
3. Are there experiments with people in any way?
#1-3 If YES, then you MUST submit the form with signatures on the HUMAN SUBJECTS section.
4. Does your project involve mold or other fungus? Viruses? Anything that can make you sick? Cultured samples collected from the environment?
5. Does your project involve DNA from one organism inserted into the DNA of another organism?
6. Does your project involve anything coming from a human or animal body like cheek cells, saliva, body fluids or other potentially hazardous biological agents?
#4-6 If YES, then you MUST submit the form with signatures on the DNA, quarantined plants, etc. section.
7. Does your project involve an animal?
#7. If YES, then you MUST submit the form with signatures on the Vertebrate Subjects section.
8. Does your project involve any chemicals such as cleaning agents, solvents, metals, or organic chemicals?
#8. If YES, then you MUST submit the form with signatures on the Firearms, Chemicals, etc. section.
9. Does your project involve model rockets, lasers, UV light, radiation, guns or gunpowder, fire, drills, saws, or anything else that might be considered dangerous or hazardous?
#9. If YES, then you MUST submit the form with signatures on the Firearms, Chemicals, etc. section.
10. Does your project involve prescription drugs, alcohol, beer, wine, cigarettes or other tobacco, or any substance that a student may not legally purchase?
#10 If "YES" to 10, it is NOT ALLOWED.
11. If your project is NO to all of the above, then you will not need this form.

Science Project

Special Research Certification

- **Vertebrate Subjects**

We have reviewed the proposed procedure of this student's project and certify that it displays humane consideration for the animal(s) involved and complies with all relevant laws concerning the acquisition, care, and humane treatment of live vertebrate animals. Two signatures required

Student's Name _____

Teacher's/supervisor's signature Phone Date

Veterinarian's signature Phone Date

- **Human Subjects**

We have reviewed the proposed procedure of this student's project and certify that to the best of our knowledge, it represents no physical or psychological hazards to any human subjects. Two signatures required

Student's Name _____

Teacher's/supervisor's signature Phone Date

School nurse's/psychologist's signature Phone Date

- **DNA, quarantined plants or animals, or lasers**

We have reviewed the proposed procedure of this student's project and certify that it will be conducted using the safest available methodology and within the guidelines appropriate to this field and as subject to any pertinent laws. Two signatures required

Student's Name _____

Parent's signature Phone Date

Teacher's/supervisor's signature Phone Date

Gold Rush Charter School Science Fair Score Sheet

Student/s _____

1. Lab Notebook

	0	2	4	6	8	
• Evidence of research.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	} 48
• Design experiment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Perform experiment and record data.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Shows analysis of data.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Draw conclusions based on data.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Evidence of chronological order.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2. Abstract

	2	4	6	
• All elements clearly stated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	} 12
• Correct grammar and spelling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. Display Content

	1	2	3	4	5	
• Problem & hypothesis clearly stated.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	} 25
• Procedure clearly shown.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Experimental data clearly shown.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Results & conclusion clearly demonstrated.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Correct grammar and spelling.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4. Display Presentation

	1	2	3	4	5	
• Overall visual appeal.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	} 15
• Sequence of thought guides viewers.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Originality.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

COMMENTS:

**Total Points
Possible: 100**

**Total Points
EARNED:**

GRCS Science Fair

Project – Evaluation (High School Only)

(How projects will be evaluated.)

Student/s _____

PROJECT TITLE _____

Evaluation Scale:

0 = cannot make judgment

1 = poor

2 = below average

3 = average

4 = above average

5 = excellent

____ Science Fair Proposal (50 pts)

____ Science Fair Check #1 (50 pts)

____ Abstract (50 pts)

____ Science Fair Notebook (50 pts)

____ Science Fair Display (200 pts)

____ The problem is clearly stated in the form of a question.

____ The display is effective in presenting the project.

____ Creativity is evident.

____ The project shows appropriate depth of study and effort.

____ The hypothesis is clearly stated.

____ The materials are listed

____ The experimental procedure is clearly stated.

____ Mathematical, computational, or observational skills are evident.

____ The experiment was repeated several times to establish validity.

____ The observations/data are clearly presented.

____ Tables, graphs and illustrations are used effectively.

____ The conclusion is justified on the basis of collected observation/data.

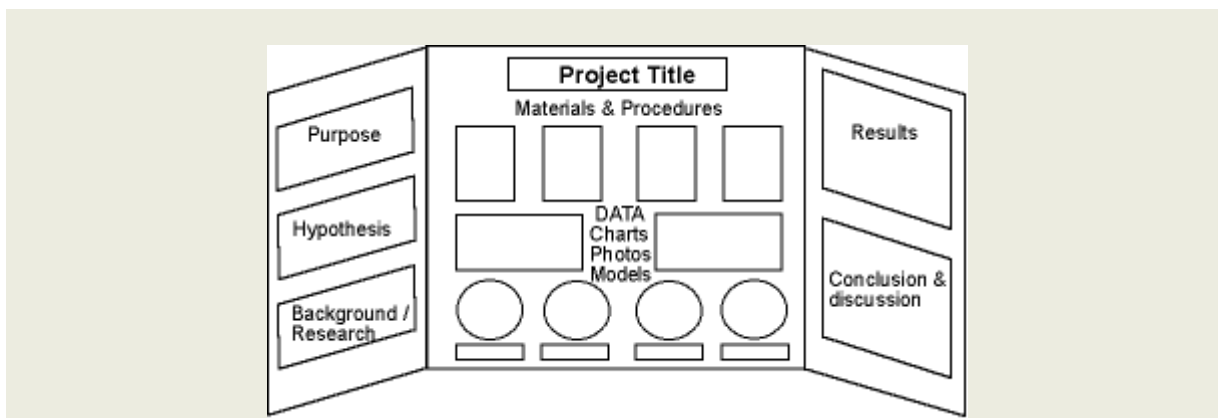
____ **Total Points (400 pts possible)**

____ **Project Grade**

Science Fair Display Board

Key Info

- For almost every science fair project, you need to prepare a **display board** to communicate your work to others. In most cases you will use a standard, three-panel display board that unfolds to be 36" tall by 48" wide.



- Organize your information like a newspaper** so that your audience can quickly follow the thread of your experiment by reading from top to bottom, then left to right. Include each step of your science fair project: Abstract, question, hypothesis, variables, background research, and so on.



- Use a font size of at least 16 points** for the text on your display board, so that it is easy to read from a few feet away. It's OK to use slightly smaller fonts for captions on picture and tables.
- The title should be big and easily read from across the room.** Choose one that accurately describes your work, but also grabs peoples' attention.

- **A picture speaks a thousand words!** Use photos or draw diagrams to present non-numerical data, to propose models that explain your results, or just to show your experimental setup. But, don't put text on top of photographs or images. It can be very difficult to read.

Materials and Construction Techniques

- The standard presentation boards are self-standing and work quite well. Display boards in black or white-colored "foam core" (a sandwich made up of two pieces of cardboard with plastic foam in the middle) or corrugated cardboard are readily available at most office supply stores (Staples, Office Depot, Office Max) for \$6 to \$12. Of course, you can also make your own for free from a large cardboard box.
- Print out or write your information on white paper that you will attach to your display board. Be sure to proofread each sheet before you attach it.
- Glue sticks (use plenty) work well for attaching sheets of paper to your display board. Use double-sided tape for items like photographs that may not stick to glue.

Use glue sticks for attaching paper to your board. Double-sided tape is good for attaching photographs.

- Tip: Instead of regular paper, use cover stock (67#) or card stock (110#). These heavier papers will wrinkle less when you attach it to your display board, especially if you use a glue stick. Matte paper is preferable to glossy because it won't show as much glare— glare makes your display board difficult to read.
- Use color construction paper to add accents to your display board. A common technique is to put sheets of construction paper behind the white paper containing your text.

Science Fair Project Display Board Checklist

What Makes for a Good Science Fair Project Display Board?	For a Good Science Fair Project Display Board, You Should Answer "Yes" to Every Question
<p>Does your display board include:</p> <ul style="list-style-type: none"> • Title • Abstract • Question • Variables and hypothesis • Background research • Materials list • Experimental procedure • Data analysis and discussion including data chart(s) & graph(s) • Conclusions (including ideas for future research) • Acknowledgements • Bibliography 	<p>Yes / No</p>
<p>Are the sections on your display board organized like a newspaper so that they are easy to follow?</p>	<p>Yes / No</p>
<p>Is the text font large enough to be read easily (at least 16 points)?</p>	<p>Yes / No</p>
<p>Does the title catch people's attention, and is the title font large enough to be read from across the room?</p>	<p>Yes / No</p>
<p>Did you use pictures and diagrams to effectively convey information about your science fair project?</p>	<p>Yes / No</p>
<p>Have you constructed your display board as neatly as possible?</p>	<p>Yes / No</p>
<p>Did you proofread your display board?</p>	<p>Yes / No</p>
<p>Did you follow all of the rules pertaining to display boards for your particular science fair?</p>	<p>Yes / No</p>

Useful Science Fair Websites:

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

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

http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml

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

<http://faculty.washington.edu/chudler/fair.html>

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