



# 2011 Central Utah Science & Engineering Fair

## Preliminary Science Fair Entry Form – Elementary Division Grades 5-6

Entry form for the Alpine District, Charter School, Jordan District, Nebo District, Provo District and Wasatch District Science Fairs and Private & Home Schools



Students in grades 5-6 who are selected to participate in the Alpine, Charter School, Jordan, Nebo, Provo, or Wasatch District science fairs must complete all four pages of this entry form to become eligible to compete in their district science fair as well as the Central Utah Science & Engineering Fair (CUSEF). Completion of this form does not guarantee advancement to CUSEF. Winners will be selected at each of the district science fairs or the charter school science fair to compete at CUSEF on March 22 or 23, 2011. There is a \$10.00 registration fee for every student who participates at CUSEF. School districts are required to submit student entry forms to CUSEF by March 4, 2011. CUSEF participants will be required to register online at <http://cusef.byu.edu/students> by March 4, 2011. For more information visit <http://cusef.byu.edu>.

### Student Information

Student's Name _____	Grade Level: (Check One) 5 <input type="checkbox"/> 6 <input type="checkbox"/>
Mailing Address _____	
City _____	Zip _____
Home Phone _____	
<b>Is your project a team project? If so, all members must be listed below.</b>	
Student's Name _____	Grade Level: (Check One) 5 <input type="checkbox"/> 6 <input type="checkbox"/>
Mailing Address _____	
City _____	Zip _____
Home Phone _____	
Student's Name _____	Grade Level: (Check One) 5 <input type="checkbox"/> 6 <input type="checkbox"/>
Mailing Address _____	
City _____	Zip _____
Home Phone _____	

### Project Information

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

School \_\_\_\_\_ District \_\_\_\_\_

Teacher Name (first & last name) \_\_\_\_\_ Teacher's Email \_\_\_\_\_

<b>Elementary Division Categories (check one):</b> <input type="checkbox"/> Earth Science <input type="checkbox"/> Engineering & Computer Science <input type="checkbox"/> Life Science <input type="checkbox"/> Physical Science - Chemistry <input type="checkbox"/> Physical Science - Physics <input type="checkbox"/> Product Testing & Consumer Science	<b>I plan to test the following in my experiments (check all that apply)</b> <input type="checkbox"/> Human Test Subjects <input type="checkbox"/> Non-Human Vertebrate Animals <input type="checkbox"/> Prescription or Over the Counter Drugs, Alcohol, Tobacco <input type="checkbox"/> Hazardous Chemicals, Weapons/Firearms, Lasers, Radiation, etc <input type="checkbox"/> Bacteria, Mold, Fungi, Viruses or Parasites ( <i>cannot be grown at home</i> ) <input type="checkbox"/> Human or Animal Fresh Tissues, Recombinant DNA or Body Fluids <i>*If any of the above are marked you must review the Science Fair Project Rules and get prior approval before you begin experimentation.</i>  <input type="checkbox"/> None of These
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Answers to the following questions are required for those who advance to the Central Utah Science & Engineering Fair:

1. Does your project require electricity? (circle one)	Yes	No
2. Is your project a team project? (circle one)	Yes	No
3. Is your project display too tall for a table?	Yes	No
4. What are the dimensions of your project display (in inches)?	_____ x _____ x _____	

*Depth    Width    Height*

**Maximum project size is 30 inches deep (front to back), 48 inches wide (side to side) and 108 inches tall (floor to top - including table). All project materials must fit within these dimensions. Projects exceeding these measurements must be modified.**

## SCIENCE FAIR PROJECT RULES

**My Experiment will Involve the Following** (check all that apply):

**Human Subjects**

All human research projects must be **reviewed** and **approved** by a science teacher, a school administrator and one of the following: a psychologist, psychiatrist, medical doctor, physician's assistant or registered nurse **before the student begins experimentation**. If they determine that there is more than minimal psychological or physical risk to the human subjects involved in the project, the student must receive written consent from each of the participants and written parental consent for students under 18 years old. If they determine that there are unacceptable risks involved the student must revise his or her project. Please attach a copy of the surveys or tests you intend to use with your research plan. Students may not publish or display information that identifies the human subjects.

**Non-Human Vertebrate Animals**

All projects involving non-human vertebrate animals must be **reviewed** and **approved** by two science teachers and a biomedical scientist (ex. a local veterinarian) **before the student begins experimentation**. Alternatives to the use of vertebrate animals must be explored and included in the student's research plan. Experiments involving laboratory animals (rats, mice, hamsters, gerbils, rabbits, etc) cannot be conducted in a student's home except for behavior studies on pets. Proper animal care must be provided daily, including weekends, holidays and vacations. Experimental procedures that cause unnecessary pain or discomfort are prohibited. Experiments designed to kill vertebrate animals are not permitted. Students may not perform euthanasia, except in emergency situations. Alcohol, acid rain, insecticide, herbicide and heavy metal toxicity studies are prohibited. Experiments with a death rate of 30 percent or higher are not permitted. Behavioral studies or supplemental nutritional studies involving pets or livestock may be done at home.

**Controlled Substances** (Prescription Drugs, Tobacco, Alcohol, etc)

All projects involving controlled substances must be **reviewed** and **approved** by two science teachers and a school administrator or biomedical scientist **before the student begins experimentation**. Students must adhere to all federal, state and local laws when acquiring and handling controlled substances. Only under the direction of a qualified scientist or designated supervisor may a student use federally controlled or experimental substances for therapy or experimentation. Students under 21 may not handle or purchase smokeless powder or black powder for science projects.

**Hazardous Substances or Devices** (Chemicals, Firearms, Welders, Lasers, Radioactive Substances, Radiation). All projects involving hazardous substances or devices must be reviewed and approved by two science teachers and a school administrator. Students must adhere to federal and state regulations governing hazardous substances or devices. **An adult must directly supervise the experiments**. Students working with hazardous substances or devices must follow proper safety procedures for each chemical or device used in the research.

**Potentially Hazardous Biological Agents**

(Bacteria, Mold, Fungi, Viruses, Parasites, Recombinant DNA (rDNA), Human or Animal fresh tissues, blood or body fluids, etc)

All projects involving potentially hazardous biological agents must be **reviewed** and **approved** by two science teachers and a biomedical scientist **before the student begins experimentation**. It is the responsibility of the student and the adults involved with the project to conduct a risk assessment. Risk assessment defines the potential level of harm, injury or disease to plants, animals and humans that may occur when working with biological agents. Risk assessment involves:

1. Assignment of the biological agent to a biosafety level risk group. **Students in grades 5-8 may only conduct research with biological agents determined to be at Biosafety Level 1 (BSL-1)**. BSL-1 agents pose low risk to students or the environment and are highly unlikely to cause disease in healthy people, animals or plants. Examples of BSL-1 Microorganisms include: *Agrobacterium radiobacter*, *Aspergillus niger*, *Bacillus thuringiensis*, *Escherichia coli* strain K12, *Lactobacillus acidophilus*, *Micrococcus leuteus*, *Neurospora crassa*, *Pseudomonas fluorescens*, and *Serratia marcescens*. **Studies involving unknown microorganisms can be determined BSL-1 if the organism is collected in a plastic Petri dish or other non-breakable container and is sealed and remains sealed during the entire experiment**. Examples of BSL-1 rDNA studies include: Cloning of DNA in *E. coli* K12, *S. cerevisiae*, and *B. subtilis* host vector systems. Examples of BSL-1 Tissue studies involve the collection of non-infectious fresh tissues (not including blood or blood products) with little likelihood of microorganisms present. Projects involving blood or blood products are considered Biosafety Level 2. Plant tissues, established cell lines and cultures, meat from food stores or restaurants or packing houses, hair, teeth that have been sterilized, and fossilized tissue do not need to be treated as potentially hazardous biological agents.
2. Determine the level of biological containment available to the student researcher. **Biosafety Level 1 projects can be performed in a school laboratory but are prohibited in the home environment. Bacteria, fungi or any other potentially hazardous biological agent can not be cultured at home**. Standard microbiological practices must be used and all hazardous agents must be properly disposed of at the end of experimentation. The experiment must be supervised by a qualified scientist or a trained designated supervisor.

**None of These**

\*For a complete list of rules regarding all of the subjects listed above please visit the following website:

<http://www.societyforscience.org/isef/rulesandguidelines>

If your science project involves any of the subjects listed above you will need to receive approval before you begin your experiment and obtain the signatures of those approving your project.

\_\_\_\_\_  
Science Teacher/Date

\_\_\_\_\_  
Science Teacher/Date

\_\_\_\_\_  
Biomedical Scientist (Doctor, Veterinarian, etc)/Date

# SCIENCE FAIR PROJECT RESEARCH PLAN

**My Question:** \_\_\_\_\_

\_\_\_\_\_

**Books or articles I have read about my topic.**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

**My Hypothesis:**

\_\_\_\_\_

**The supplies I will need for my experiment are:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Where will your experiment be conducted? Please list all locations.**

*(Please note that bacteria/fungi projects or any other project involving potentially hazardous biological agents cannot be cultured at home.)*

\_\_\_\_\_

**Adult Supervisor's Name & Phone Number** \_\_\_\_\_

**Procedure**

*(Please write a detailed explanation about what you plan to do for your experiment. Include all safety precautions that will be in place for you and your test subjects):*

## Display and Safety Rules – The Following Items Cannot be Displayed at the Science Fair

1. Living Organisms
2. Plant materials (living, dead or preserved)
3. Taxidermy specimens or parts
4. Preserved animals – includes embryos
5. Human or animal food
6. Human or animal parts or body fluids
7. Soil, sand or waste samples
8. Laboratory/household chemicals – including water
9. Poisons, drugs, hazardous substances or devices
10. Sharp items – pipettes, glass, syringes, needles
11. Dry ice or other sublimating solids
12. Flames or highly flammable display materials
13. Empty tanks that previously contained combustible liquids or gases
14. Batteries with open top cells
15. Photographs of people other than yourself or your family without their written permission.
16. Photographs or other visual presentations depicting vertebrate animals in surgical techniques, dissection, necropsies, other lab techniques, improper handling methods, improper housing conditions etc.

*The Central Utah Science & Engineering Fair, and the participating school districts reserve the right to remove anything else displayed with your science fair project that may be deemed hazardous or inappropriate for public display.*

## Student & Parent/Guardian Signatures

I certify that my science project complies with all of the experimental rules of the Central Utah Science and Engineering Fair. I understand that if I have not complied with these rules that my project could fail to qualify for competition. I have also read and I understand the display and safety rules. If I display any of the objects listed above, I am aware that they will be removed and returned at the conclusion of the science fair. If I am selected to participate at the Central Utah Science & Engineering Fair, I agree to set up my project on the appointed day prior to my competition and I will leave my project on display until the designated time for project tear down.

Signature of Student \_\_\_\_\_ Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

**If this is a team project, each additional team member must sign below.**

Signature of Student \_\_\_\_\_ Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

Signature of Student \_\_\_\_\_ Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

I give my consent to allow my child to ride the school bus from the Brigham Young University Conference Center to the Award Ceremony on the campus of Brigham Young University.

I give my permission to allow appropriate information about my child to be used for publicity purposes. This includes photographs submitted by me or my child as well as any photographs, videos or likenesses that by be used by the Central Utah Science & Engineering Fair, the BYU David O. McKay School of Education and the BYU-Public School Partnership, or the sponsors of awards for the purposes of illustration, advertising or publication in any manner. I also consent to the use of my child's name in connection therewith.

Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

**If this is a team project, each additional team member's Parent/Guardian must sign below.**

Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

## Teacher Signature

I have reviewed and approved this student's research plan prior to experimentation and certify that they will comply with all of the experimental rules of the Central Utah Science & Engineering Fair.

\_\_\_\_\_  
Teacher Signature Date

## CUSEF Approval for Competition

\_\_\_\_\_  
Regional SRC Approval

\_\_\_\_\_  
Date

Every effort will be made to protect exhibits from loss or damage. However, since the exhibition of projects is open to the public, the CUSEF Committee, Brigham Young University or the BYU-Public School Partnership school districts cannot and will not accept any liability or responsibility of any nature for any theft, loss or damage to any exhibit or any other property of any CUSEF participant. Accordingly, it is recommended that each participant should secure and guard his/her project and take all prudent precautions to prevent any theft, loss or damage to their project.

For more information please visit our website <http://cusef.byu.edu>

The Central Utah Science & Engineering Fair is presented by the BYU David O. McKay School of Education and the BYU-Public School Partnership