2014 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 25 or 26, 2014. 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 February 28, 2014. CUSEF participants will be required to register online at http://cusef.byu.edu/students by February 28, 2014. For more information visit http://cusef.byu.edu.

Student Information

Student's Name_____ **Grade Level**: (Check One) 5☐ 6☐

Mailing Address_____

City_____ Zip_____ Home Phone_____

Is your project a team project? If so, all members must be listed below.

Student's Name _____ **Grade Level**: (Check One) 5☐ 6☐

Mailing Address _____

City_____ Zip_____ Home Phone_____

Student's Name_____ **Grade Level**: (Check One) 5☐ 6☐

Mailing Address _____

City_____Zip_____ Home Phone_____

Project Information

Project Title_____

School_____District_____

Teacher Name (first & last name)_____ Teacher's Email_____

Elementary Division Categories (check one):

- ☐ Earth Science
- ☐ Engineering & Computer Science
- ☐ Life Science
- ☐ Physical Science - Chemistry
- ☐ Physical Science - Physics
- ☐ Product Testing & Consumer Science

I plan to test the following in my experiments (check all that apply)

- ☐ Human Test Subjects
- ☐ Non-Human Vertebrate Animals
- ☐ Prescription or Over the Counter Drugs, Alcohol, Tobacco
- ☐ Hazardous Chemicals, Weapons/Firearms, Lasers, Radiation, etc
- ☐ Bacteria, Mold, Fungi, Viruses or Parasites *(cannot be grown at home)*
- ☐ Human or Animal Fresh Tissues, Recombinant DNA or Body Fluids

If any of the above are marked you must review the Science Fair Project Rules page of this application and get prior approval signatures before you begin experimentation.

- ☐ None of These

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. cerevesiae*, 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 (including animal meat) are considered Biosafey Level 2. Plant tissues, established cell lines and cultures, 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 cannot 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 or grown 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*):

Use another sheet of paper if necessary.

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 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