

# CCEA Science Fair 2009-2010

## Student Handbook

Calvary Chapel Education Association ▪ Southern California

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## **I. Statement of Purpose and Philosophy**

The CCEA Science Fair is a competition designed to encourage students from 6<sup>th</sup> – 9<sup>th</sup> grades (elementary – high school in the future) levels to refine and put into action scientific principles found in creation. In addition, the students do not compete with each other, rather, they are competing against set standards used to measure each participants work and ability in both creating and presenting a project which reflects what has been learned in their exploration.

The purpose of the CCEA Science Fair is to allow students to exercise their critical reasoning and ability of expression. This will be evidenced by the expression of their thoughts filtered through the influence of God's Word.

## **II. Preliminary Requirements**

Each school should conduct their own school Science Fair where they may chose up to five projects from each grade level to be entered in the CCEA regional Science Fair (Southern California at this time). Current entry levels are as follows:

Middle School grades	6 <sup>th</sup> through 8 <sup>th</sup>
High School grade	9 <sup>th</sup>

(CCEA future Science Fairs to include 3<sup>rd</sup> – 5<sup>th</sup> and 10<sup>th</sup> – 12th grades.)

All exhibits must show original research and creativity of a science problem with supporting data. Each student may enter only one project. Projects will include display board which tells a story of experiment which student has done. The areas of science appropriate for scientific study include the areas of: Life Science and Physical Science (Engineering may be added in the future). While students are encouraged to bring supporting materials used to complete experiment; plants, live animals, caustic or dangerous chemicals, as well as any explosive materials are not permitted at the CCEA Science Fair. These things may be used in the experimental process with photos taken and displayed on project board. Each project must be the entry of an individual, not a team. Student's name, grade, and school name must be clearly written on the back of project board in the lower right hand corner. Labels with project number will be added to project board; front, upper, right hand corner for judging purposes.

All participants will receive a judging sheet with grading details and a ribbon. Top three projects in each grade level will be awarded with a special award of accomplishment. Ribbons will be awarded based on following scale:

Superior	100 – 86 points
Excellence	85 – 71 points
Good	70 – 0 points

### **III. General Information**

#### **A. Categories**

1. Life Science: Behavioral; Botany; Micro Biology; Zoology; Physiology; General Biology
2. Physical Science: Physics; Chemistry; Earth/Space Science; Math and Computers; General Science

Both categories are permitted for all grade levels. To date all projects must be experimental; in the future non-experimental, such as Engineering and Surveys (statistics) may be added.

Projects must include a display board including a title, pictures or other support of data such as charts and graphs, etc. to help tell the story. All project boards should include: Hypothesis, Procedure, Results, Conclusion, Abstract and Scriptural Integration. A written report is required. Students must have a working knowledge of the project and be prepared to explain it to the judges.

More in-depth projects, written report and oral presentation are expected of students at each additional grade level.

#### **B. Maximum Size**

The exhibit display may not exceed 4 feet wide by 2 feet deep by 4 feet high. If display exceeds the size limit it will be penalized in points.

## **C. Display Board**

Backboard displays can be made of wood, pegboard, or cardboard (cardboard is suggested). Backboard sections must be joined together securely to insure a rigid support for display (board when unfolded should stand with no additional support). All items should be securely attached to the display board.

Project display should be attractive, creative, eye catching, neat and informative.

Project title, hypothesis and abstract (summary, approximately 50 words) etc. must be on display board.

## **D. Project Assistance**

**The science project is to be the product of one student's work – NO team projects.**

Students may seek help from an adult or another student in areas of completing project board. All help must be acknowledged in writing on the display board. **Finally, display board design/layout must be the student's own work. At all grade levels, students must do at least 90% of the total work.**

## **E. Electricity**

All exhibits requiring electricity must be designed for 110 volts. The ground plug (3 prongs) must be used. Exhibitors must provide their own extension cords and omni boxes.

## **F. Gas/Water**

No gas or water outlets will be provided.

## **G. Suitability for Exhibition:**

Dangerous/unsafe exhibits will not be permitted. The fair officials reserve the right to remove any project deemed objectionable or hazardous.

## **H. Project Requirements**

All display boards are required to have scripture integration, references to scripture which ties principles of God's Word to project.

Written reports should be a minimum of 500 – 700 words in length (M.S. - 500, H.S. – 700), satisfactory detailed, footnoted, and containing a works cited (bibliography) page.

The main emphasis for the experimental project is research based on scientific methodology. Therefore stating of the problem, background research, formation of a hypothesis, conduction of an experiment with detailed procedure outlined, data taken and shared, as well as a final conclusion stating what happened, must appear in presentation. Detailed information from start to finish of project should appear in Logbook. Keep good notes of everything which takes place as you prepare to do your experiment, what takes place during experiment, and your understanding of the results of experiment. Keep the Logbook as neat as possible; it will be displayed with project display board.

## **IV. Specific Display Items**

1. Title
2. Abstract
3. Procedure
4. Hypothesis
5. Results – pictures, charts and graphs of data
6. Conclusion
7. Written Report
8. Log Book
9. Equipment, materials, samples or other items from the experiment
10. Biblical references

Remember to write your name, school, grade level in the lower right hand corner on the back of the display. Acknowledge all help.

## **V. Judging of Project**

### **1. Creativity (30%)**

- Originality of idea or approach
- Proper use and/or creation of equipment
- Proper planning, orderly execution
- Analysis of data
- Interpretation of results

### **2. Scientific Method (30%)**

- Hypothesis properly stated
- Experimental variables recognized and controlled
- Objective measurements used, data entered in logbook
- Experimental limitations/sources of error identified
- Conclusions drawn are supported by the data
- Understanding of scientific principles and terminology

### **3. Thoroughness (20%)**

- Planned project completed, purpose achieved
- Familiarity with subject matter, background study
- Adequacy of scope and approach, alternatives considered
- Abstract, hypothesis, data, conclusions properly displayed
- Spiritual application

### **4. Technical Skill (10%)**

- Application of skill and knowledge
- Overcoming of problems
- Poised and articulate oral presentation

### **5. Neatness and Display (5%)**

- Display is neat, spelling correct, easy to follow
- Overall eye appeal and dramatic effect

### **6. Level of Difficulty (5%)**

- Complexity of project and level of difficulty