#### Georgia FFA Association

###### Agriscience Fair

##### Career Development Event

# I. OVERVIEW

The FFA Agriscience Fair recognizes middle and high school students who are studying the application of scientific principles and emerging technologies in agricultural enterprises. Areas of participation closely mirror those of the International Science and Engineering Fair but reflect an agricultural theme. Categories include:

1. Animal Systems (AS)

2. Environmental Services/Natural Resource Systems (ENR)

3. Food Products and Processing Systems (FPP)

4. Plant Systems (PS)

5. Power, Structural and Technical Systems (PST)

6. Social Systems (SS)

The Georgia Agriscience Fair will mirror the National FFA Agriscience Fair. More information on the National Agriscience Fair may be found at: [www.ffa.org/programs/ag\_sci/documents/agsci\_handbook.pdf](http://www.ffa.org/programs/ag_sci/documents/agsci_handbook.pdf)

## II. PURPOSE

Provide students with an opportunity to use the scientific process;

Provide students an opportunity to achieve recognition for accomplishments in agriscience;

Reinforce skills learned in agriscience courses;

Provide students an opportunity to demonstrate and display agriscience projects that are products of their agriscience courses.

**III. ELIGIBILITY**

1. This event is open to students in grades 6-12 who are agricultural education students, and are paid members of a chartered FFA chapter. Each student’s name must appear on the chapter’s FFA roster at least 10 days prior to competition above the chapter level. In team entries, both students shall be members of the chapter registering the project.

2. Division I is open to individual members in grades 6-7-8-9.

3. Division II is open to individual members in grades 10-11-12.

4. Division III is open to teams of two members in grades 6-7-8-9.

5. Division IV is open to teams of two members in grades 10-11-12.

6. Student grade level is the grade that the student is in when participating at the state level.

7. Chapters can have up to 24 entries, one in each of the 4 divisions of each of the 6 categories. For example: A chapter may have an entry in Animal Systems in Division I, II, III and IV; but may not have more than one entry in a division. Students must be FFA members.

**IV. Rules**

1. Each member and/or team member may enter only one project.
2. A team is a maximum of two members working on the same project.
3. In team projects, both members of the team must be members of the same FFA chapter.
4. Exhibited projects and project reports shall be the results of the student(s) own efforts.
5. Successive year projects must indicate change or growth in the project from the previous year(s) in the logbooks. Displays may reflect the current year’s work only.
6. If an exhibit becomes unsafe or unsuitable for display, it will be removed and deemed ineligible for any awards.
7. Projects involving vertebrate animal subjects must conform to the following statement: Experiments on live animals involving surgery, the removal or parts, injection of harmful chemicals, and/or exposure to harmful environments, are not acceptable. Live vertebrates are not permitted at the fair.
8. Toxic and hazardous chemicals are prohibited.
9. All chemical glassware must be displayed in a stable manner. The items must be back from the edge of the table and must not be operational at any time.
10. Students should substitute colored water, photographs, or drawings for chemicals.
11. Crystals other than sucrose and sodium chloride may not be displayed. Projects involving other crystals may be represented by drawings, pictures, or three dimensional mode
12. Hypodermic needles and syringes may not be displayed at the exhibit.
13. No wild incubated cultures incubated above room temperature will be allowed. No cultures taken from humans or other warm-blooded animals may be used.
14. Plastic petri dishes must be used and must be sealed.
15. Lasers may not be used in any exhibit.
16. Dangerous and combustible materials are prohibited.
17. No exhibit may have any open flame. Any part of an exhibit that exceeds temperatures above 100 degree C must be adequately protected from its surroundings.
18. If an exhibit includes electrical wiring or devices, they must be safe. For voltages above 20 volts, special precautions must be taken. All connections must be secure and provide suitable protection against short circuits, etc.
19. All wiring carrying more than 20 volts must be well insulated. Also, the connections must be either soldered or secured by UL approved fasteners. The wire used must be insulated properly for the maximum voltage that will be present and the wire must be of sufficient size to carry the maximum current that is anticipated. Open knife switches or doorbell type push buttons in circuits using more than 20 volts may not be used.
20. If an exhibit will be connected to 120 volt AC power (plugged into a wall outlet), fuses or circuit breakers must be provided to protect others who share the same source of power. The power cord used must be UL approved for the voltage and current it will be carrying and it must be at least 6 ft long. Notice should be given prior to display if power will be needed for exhibits. Power may not be available.
21. Exhibits requiring voltages above 120 AC are not allowed.
22. This event will follow the general procedure established for all Georgia FFA career development events.
23. It is highly recommended that students wear official dress as outlined in the official FFA manual when presenting their projects.
24. The State FFA Executive Committee and their appointees will be in charge of this event.

Display Requirements:

1. Each display may consist of one or more panels of information and any objects the students’ wishes to display. The exhibit must be stable and free standing. The exhibit panels may be of form core or poster board construction.
2. The maximum size of the project is 48 inches wide by 30 inches deep by 108 inches high from floor (or 78 inches high from the top of the table.)
3. All projects must have the following information in the upper right hand corner of the display: Name of person(s) responsible for developing the project; Chapter Name; Title of Category entered; Division I-IV.

Causes for Disqualification

1. Failure to meet any one or more of the eligibility rules set forth in these guidelines.

2. Failure to follow the participation guidelines for this event.

3. Failure to meet certification and form requirements specified.

4. Once judging has begun, any assistance given to a team or participant from any source other than the agriscience fair officials or assistants will be sufficient cause to disqualify participant(s).

5. Event superintendents may remove any participants who are being hazardous either to themselves or others. Such removal will constitute as an immediate disqualification from the agriscience fair.

6. Once a participant starts the event, he/she must complete it or face disqualification, unless prior permission from the event superintendent has been obtained.

7. Other than those approved by the event officials, participants will not be allowed to utilize personal electronic communication devices during the entire course of the event.

8. No advisor, coach, parent or fellow chapter member will be allowed in the judging area once judging officially begins. Any advisor, coach, parent or fellow chapter member found to do so may disqualify their participant.

9. Any participant, advisor or chapter member tampering with another participant’s display will lead to their chapter participant’s disqualification.

10. The official maximum size for a project is 48 inches wide by 30 inches deep (the distance from front to back) by 108 inches high (from floor to top, includes table if project is on table top). Failure to meet these requirements will result in disqualification. See Display requirements for more information.

**V. Event Format**

The Agriscience Fair will consist of Display Area, Log book, Project Report, and Interview. The interview with the judges may not exceed 15 minutes.

Description of Categories:

**Animal Systems (AS)**

The study of animal systems, including life processes, health, nutrition, genetics, management and processing, through the study of small animals, aquaculture, livestock, dairy, horses and/or poultry.

Examples:

• Compare nutrient levels on animal growth

• Research new disease control mechanisms

• Effects of estrous synchronization on ovulation

• Compare effects of thawing temperatures on livestock semen

• Effects of growth hormone on meat/milk production

**Environmental Services/Natural Resource Systems (ENR)**

The study of systems, instruments and technology used in waste management; the study of the management of soil, water, wildlife, forests and air as natural resources and their influence on the environment.

Examples:

• Effect of agricultural chemicals on water quality

• Effects of cropping practices on wildlife populations

• Compare water movements through different soil types

**Food Products and Processing Systems (FPP)**

The study of product development, quality assurance, food safety, production, sales and service, regulation and compliance and food service within the food science industry.

Examples:

• Effects of packaging techniques on food spoilage rates

• Resistance of organic fruits to common diseases

• Determining chemical energy stored in foods

• Control of molds on bakery products

**Plant Systems (PS)**

The study of plant life cycles, classifications, functions, structures, reproduction, media and nutrients, as well as growth and cultural practices, through the study of crops, turf grass, trees and shrubs and/or ornamental plants.

Examples:

• Determine rates of transpiration in plants

• Effects of heavy metals such as cadmium on edible plants

• Compare GMO and conventional seed/plant growth under various conditions

• Effects of lunar climate and soil condition on plant growth

• Compare plant growth of hydroponics and conventional methods

**Power, Structural and Technical Systems (PST)**

The study of agricultural equipment, power systems, alternative fuel sources and precision technology, as well as woodworking, metalworking, welding and project planning for agricultural structures.

Examples:

• Develop alternate energy source engines

• Create minimum energy use structures

• Compare properties of various alternative insulation products

• Investigation of light/wind/water energy sources

**Social Systems (SS)**

The study of human behavior and the interaction of individuals in and to society, including agricultural education, agribusiness economic, agricultural communication, agricultural leadership and other social science applications in agriculture, food and natural resources.

Examples:

• Investigate perceptions of community members towards alternative agricultural practices

• Determine the impact of local/state/national safety programs upon accident rates in agricultural/natural resource occupations

• Comparison of profitability of various agricultural/natural resource practices

• Investigate the impact of significant historical figures on a local community

• Determine the economical effects of local/state/national legislation impacting agriculture/natural resources

## VI. SCORING

100 Points Possible Scores of 1-10 possible in each of the following areas: Knowledge Gained, Scientific Approach, Experimental Research, Individual/Teamwork, Thoroughness, Information, Conclusions, Written Project Report, Interview, Visual Display.

**VII. TIE BREAKERS**

The judges of the event will break ties.

### VIII. AWARDS

Awards shall be determined each year by the Board of Trustees of the Georgia FFA Foundation. The event is made possible through the Georgia FFA Foundation as a special project of an industry sponsor or from the Foundation General Fund. Minimum awards will recognize first and second places in each Division/Category at the State Agriscience Fair. The first place winner in each Division/Category will be eligible to compete in the National Agriscience Fair.

**IX. REFERENCES**

National FFA Agriscience Fair Guidelines and Procedures

**Science Fair Project Guide**

**UGHS Agriscience**

scrown@henry.k12.ga.us

Dear Parents,

We don't need to tell you that children are naturally curious. An excellent way to teach them to develop problem-solving skills is to direct their curiosity toward scientific investigation. A scientific investigation that uses the scientific method helps develop your child's thinking skills. You, the parent, play one of the most important roles in your child's education. The encouragement, guidance, and support that you give your child will not only help him or her develop valuable thinking skills, but the time you and your child spend working together will deepen the parent-child relationship that lasts forever. There are many that you can do to help your child with a science project without doing it for them. Please check the official web site: @[www.sciserv.org/isef](http://www.sciserv.org/isef%20) for full details and information.

<http://www.sciserv.org/isef>

Helpful websites

<http://school.discoveryeducation.com/sciencefaircentral/>

[http://sciencebuddies.org](http://sciencebuddies.org/)

<http://www.sciencebuddies.org/scienee-fair-projects/project-Iaboratory-notebook.pdf>

10 Tips for Helping

1. This is your child's project and should reflect his or her interests. Listen to their questions. Those questions often make great project ideas.

2. Although this is your child's project and is to be his or her own efforts, there is no substitute for your praise and support. Encourage your child and let him or her know you are interested in their ideas.

3. Help your child with skills that he or she has not yet mastered, such as organization, measuring, calculating, and construction.

4. Help your child follow the schedule to complete the project on time. Post schedule dates on the refrigerator.

5. Provide a time and area in your home where your child can work without interference from television or other distracters.

6. Help your child acquire the materials needed for the project.

7. Help your child take necessary safety precautions to insure a safe project.

8. Provide transportation to places such as libraries, museum, nature center, resource persons, etc.

9. Realize that the real prize of a science project is the development of critical thinking skills, not the blue ribbon presented by a science fair judge.

10. Contact your science teacher if you have any questions.

3 Test grades: (1) Meet *all* due dates, (2) Research Paper, (3) Backboard exhibit

3 Quiz grades: (1) Log book, (2) Pin design, (3) Abstract

Science Fair Timeline

Assignments Due Dates

Logbook Purchase and bring in a composition notebook Sept 3 Question The problem you would like to investigate in the Sept 3

form of a question.

Come up with 3 possible questions that you could test.

Purpose How is this relevant? Would this benefit the Sept 3

public?

Final Science Fair Question

Documents From Rules Wizard on isefwebsite. Sept 10

(see documents page in this packet)

\*\*\*You may not start collecting data until all forms are turned in and proiect approved\*\*\*

Category The area of science you are investigating Sept 10

Research Plan Page 2 ofForm lA completed. Sept17

Log Book Check Table of Contents- preliminary Sept 17

Experimental progress and possibly data

Bibliography- 5 references in proper APA

bibliographic form.

**Research-**5 facts minimum for each reference

(indicate which source info is from)

Log Book Check Hypothesis-If, then statement Oct 8

Variables- independent and dependent

Procedures-write detailed step by step instructions of your experiment

Materials-List of all supplies needed (size, quantity, brand, etc.)

Log Book Check Preliminary Data Table- WITH Measured Oct 15

DATA

Log Book Check Data Collected-All data gathered and assembled Nov5

into appropriate graphs, tables, and charts. Pictures

may be included.

Log Book Check Analysis/Conclusion- analyze data and write a Nov12

concluding paragraph that supports or rejects your

original hypothesis.

Project Report Research paper- typed, 12 point font, APA Nov 17

format, 3' person, double spaced

Abstract Official form: Dec 9

[**http://www.societyforscience.org/isef/document/**](http://www.societyforscience.org/isef/document/)

A brief summary (250 words max) of entire project

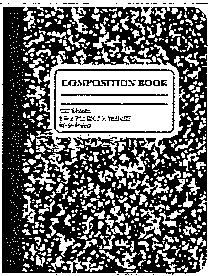
Proiect Due Display board, log book, report, all documents Dec11

Peer Review Peers question, 'judge" projects Dec11

Revised project You have the option to revise your project after Dec18

the peer review.

Keep track of all due dates!!!Your projects will be showcased in the UGHS Science Fair. Winners from the UGHS Science Fair will be invited to the Henry County Regional Fair in February.

LOGBOOK

**Must be a composition notebook!!! Recording observations and data**

Use a composition notebook for recording all measurements and observations. This notebook is called the

logbook. Record all information about your science project each day. Consider the following:

1. . Number all pages. Have proper table of contents.

2. Make sure that you include accurate metric measurements in your data. Give masses in grams, volumes in milliliters, and linear measurements in centimeters or meters.

3. Keep lots of notes! It is better to have too much information that not enough.

4. You **MUST** use PEN! Do not erase! **Do not tear out** pages! If you make a mistake draw a single line over the mistake and make a correction next to it.

5. Write down the date and time when making observations.

6. Keep track of materials used, their quantities and cost.

7. Take photographs and video during your project. These can be used as part of your display board.

Write down who took the pictures and when/where so you can cite the source on the pictures you use in your display.

**How to write an Abstract**

Must use the official ISEF Abstract Form- need several copies!!! Abstract heading must be in the following form:

• Exact title that is on your board (in CAPITAL LETTERS)

• Last name, first name, middle initial

• School Name

• City and State

Abstract Text:

Write a one-page summary (maximum of250 words). Generally the suurmary is written in 3 paragraphs: **Paragraph 1** summarizes the introduction in 4 to 5 sentences. It includes tl1e question, brief review of information stressing the relevance of the project, and the hypothesis in an lf...then... format.

**Paragraph** 2 briefly reviews the method (NOT all of the steps) and how the data was collected. Include the number of trials, total number of samples, and types of measurements taken.

**Paragraph** 3 identifies any significant results, errors and suggested improvements to the project with the

conclusion, and relevance. Plans for continuing the project could also be proposed here.

APA Format for References

(**citationmachine.net is your BEST friend when writing bibliographies!)**

**Periodical**

Author last name, Initial. (Year, Month, Day of publication). Title of article. Title of Periodical. Volume

(Number), page numbers.

Dnmbo, A., Jones,G. & J.Smith. (1995). Palm trees protect Fido. The UtahVeterinarian. 23(4),

p37-38.

**Book**

Author last name, Initial. (Year). Title of book. City of Publication: Publisher. Pages

Fako, A. (1996). Parasites in pets. Dallas, TX: Bungle Press. 34-38.

**Entry in Encyclopedia or Reference Book**

Author last name, Initial. (Year). Entry title. In Title of the encyclopedia. (Volume number, pages). City of Publication: Publisher.

**Smith**I. & **CornyD. (1992) Worms in dogs. In The history ofF!orida kennels. (Vol. 3; pp**

**22-426). Nowhere,** FL: **Pitts Univers!ty Press.**

**On-line References**

Author last name, Initial. (Year, Month, Day of latest update, (if not available write n.d. for "no date").

Article title. Page title. Retrieved Month/Day!Year from web address.

**Neckout, .f. (1997}. Nature1S pesticides. Pe-st control aiternatives. Retrieved June, 23, 2004 from**

[**Vf'\'VW**](mailto:Vf%27\%27VW.nom_orepests@epa.gov) [**.nom\_orepests@epa.gov.**](mailto:.nom_orepests@epa.gov) **Please note:**

I) Only the first word of a title is capitalized unless it is a proper noun, except in the titles of

journals or newspaper.

2) When an author's name is not given, move the title normally after the date before the date.

3) Government publications should use the agency's complete name as the author if no other author is listed.

**Steps for setting up the Report**

**Note:** This final draft should be **typed** in Times New Roman or Arial; 12 point; double spaced; 3'd person; and in APA format. Please use the front side of the paper only.

|  |  |  |  |
| --- | --- | --- | --- |
| Title Page (Put your title and category in the middle of the page in all caps.)  Your Name Period School Grade Date Teacher  1 | Table of Contents  I. Introduction Section  Background.....................3  Purpose................................4  Hypothesis.........................5  II. Experiment Section  Materials.............................6  Procedure...........................? Data and observations...B Results and Discussion...9  III. Conclusion Section  Analysis and Conclusion..............................!O Acknowledgements ...........11  Bibliography .........................12  Appendix (optional)...........13  2 | Background Research  Summary of the research you did before you started that relates to your project.  3 | Purpose  Tell what you are trying to learn in your experiment and how this information can benefit humankind or expand scientific knowledge.  4 |
| Hypothesis  This should be one or two sentences that explain your  "educated guess" Remember:  If ....(tell what you will  do), then..(what you think wi II happen)  because..(how can you explain your guess?)  5 | Materials  List all the supplies needed for your experiment.  Include the amounts and sizes in metric units.  6 | Procedures Give step by step directions of  how to do your  experiment.  List (1,2,3,...) like a recipe so someone could  easily repeat your steps and validate your results.  Include detailed photographs or drawings of self-designed equipment. *Only include this year's wark.*  7 | Data and  Observations Include everything that happened and what you observed as you did your project.  Include charts, tables, graphs, and pictures.  This section mat be several pages  long.  8 |

Results and Analysis and Conclusion

Discussion 2-5 paragraphs

Acknowledgements Bibliography

The results include data and You should always credit analysis. This should include Briefly summarize your those who have assisted statistics, tables, and results. State your findings you, including individuals, graphs. in relationships of one businesses and

variable with the other. educational or research

The discussion is the Support those statements institutions. However,

essence of your paper. with empirical data (one

acknowledgments listed

Compare your results average compared to the on a project board are a with theoretical values, other average, for example). violation of D & S Display published data, commonly Be specific, do not rules and must be

held beliefs, and/or generalize. Never introduce removed.

expected results. Include anything in the conclusion

a discussion of possible that has not already been

errors. How did the data discussed. Also mention

Examples:

vary between repeated practical applications. *Jane Doe provided the* observations of similar *materials for the* events? How were your \*Relate your conclusion back to ***experiment.***

results affected by your hypothesis. Was the

uncontrolled events? hypothesis supported? What *John Doe allowed us to use*

What would you do would you do differently? *his lab for our experiment.*

differently if you repeated this project? What other experiments

should be conducted?

(Probably 2 pages)

9 10

11 12

Exhibit Maximum Size:

Science Fair Display Board

76 em (30 in) deep front to back

122 em (48 in) wide, side to side

327 em (108 in) high, floor to top

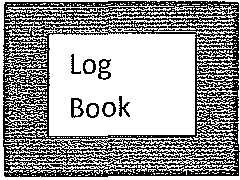
Below is a model of how you should arrange your display board.

Follow clisplay and safety rules on the official science fair website. Remember to use metric units and cite source of pictures.

What the Board Should Display

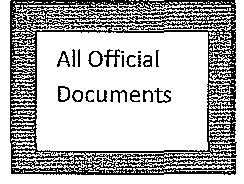
Conclusion

Photos

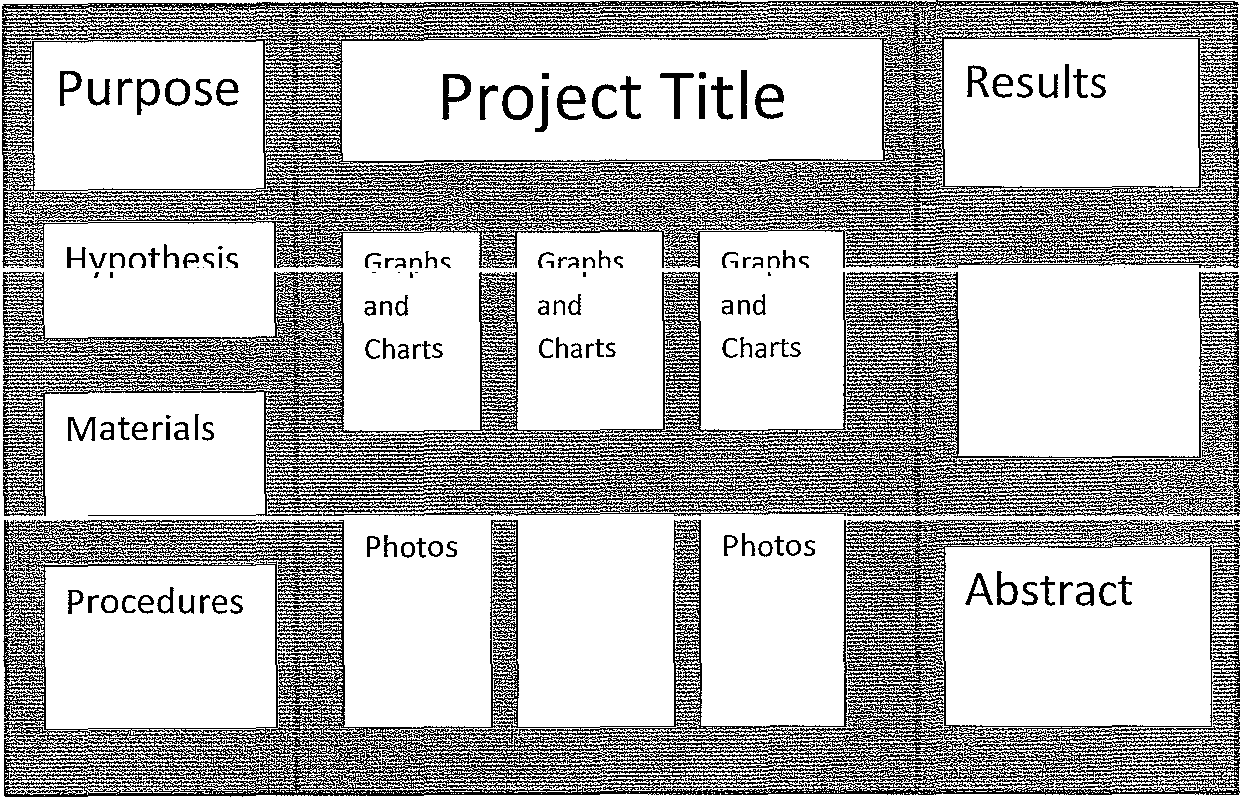
In front of

Board:

Research

Paper in

Binder



Your Name on BACK of Board.



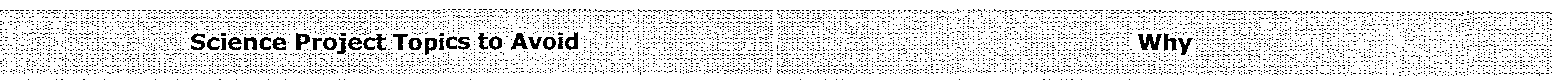
Follow display and safety rules on the ISEF website. Remember: Use metric units and cite source of photos.

Science Fair Exhibit/Backboard Rubric Sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Component** | **1** |  | 3 |  | **6.25** |
| Testable Question | The student asks a question |  | The student asks a question that is |  | The student asks a question that is |
|  | that is not testable or does not |  | testable, but it is not specific or |  | testable and measured |
|  | **make sense.** |  | quantifiable. |  | **quantitatively.** |
| Hypothesis | The student has a hypothesis, |  | The student has a hypothesis that |  | The student has a hypothesis that is |
|  | **but it does not answer the** |  | **answers "the question", but it is** |  | quantitatively measurable and |
|  | **"testable questionn** |  | **not quantitatively measurable** |  | **answers "the question"** |
| **Materials** | The materials used for the |  | Some, but not ALL materials used |  | ALL the materials used for the |
|  | project are not listed |  | for the project are listed |  | project are listed |
| **Procedure** | **The audience is not able to** |  | **The audience is able to reproduce** |  | The audience is able to follow the |
|  | reproduce the project |  | the project somewhat, but only |  | direction and reproduce the project |
|  |  |  | with help |  | himself |
| **Experiment Results** | The data tables/graphs are |  | **Uses quantitative data** |  | The data tables/graphs are |
|  | **qualitative or incomplete** |  | tables/graphs but are not complete |  | **quantitative and answers "the** |
|  |  |  |  |  | **question". Tables and charts include** |
|  |  |  |  |  | appropriate titles and labels. |
| Data Analysis/ | The student explains what |  | The student attempts to explain |  | Student clearly interprets results |
| **Discussion** | happened, but not WHY it |  | Why but does not connect their |  | through logical discussion of results. |
| (Counts 2x) | happened |  | data with their explanation |  | The student uses data to explain |
|  |  |  |  |  | WHY-(AS SUPPORT) |
| **Conclusion** | **Attempts to ansWer the** |  | **Conclusion answers the "testable** |  | **Conclusion answers the "testable** |
|  | **"testable question", but lacks** |  | **question", but does not use** |  | **question" using evidence from** |
|  | **clarity and evidence** |  | **evidence from the results** |  | **results and suggests the next step!** |
| Visuals/pictures | **Has pictures, but does not** |  | Has pictures that represent the |  | **The pictures represent the process of** |
| (Photos must be | **represent the process of the** |  | **process of the experiment but does** |  | **the experiment (construction,** |
| original) | **experiment.** |  | **not have captions** |  | **experimentation, results) and has** |
|  |  |  |  |  | **captions** |
| **Organization/ Neatness** | **The project is a mess. Sections**  are not labeled and out of |  | Most of the parts of the display are labeled and somewhat easy to |  | All parts of the display are labeled and it is easy to follow |
|  | **order** |  | follow |  |  |
| **Experimental Design** | **There are too many undefined** |  | **There is more than one** |  | **All variables are considered and** |
| (Counts 2x) | **variables** |  | **manipulated variable** |  | constant except for the CLEAR |
|  |  |  |  |  | manipulated variable |
| Originality of the project | **Approach is unoriginal or**  below lOth grade level |  | Approach is common. Student  **made some effort to make project** |  | Approach is unique. Student made significant effort to make project |
|  |  |  | **their own** |  | **their own** |
| Validity | **Performs only one or too few** |  | **Performs more than one trial but** |  | Performs multiple trials(# of trials |
|  | trials |  | not enough to be a valid project |  | depends on type of project) |
| Abstract | Abstract does not meet |  | **Abstract meets requirements on** |  | **Abstract is on correct document and** |
|  | **requirements on page 3 of** |  | page 3 of student handbook for |  | taped to back of board. |
|  | student handbook for ISEF; or |  | ISEF but is not on the official |  |  |
|  | is not taped to BACK of board. |  | document. Abstract is taped to |  |  |
|  |  |  | back of the board. |  |  |
| Log Book, | **Missing one or more of the log** |  | Log book, ISEF documents or |  | Log book, ISEF documents, and |
| **Documents,** | book, ISEF documents, or |  | research paper were 1 day late |  | research paper are placed in front of |
| **Research paper** | **research paper. OR items are 2** |  |  |  | the display board. |
|  | days late. |  |  |  |  |

See guidelines in your ISHStudent Handbook pages 2 and 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Max**  **Points:** | **Requirements:** | **Meets** | **Somewhat** | | **Missing** | **Points**  **Scored:** |
|  |  |  |  | |  |  |
| 5 | 3'' person | 5 points | 2.5 points | | 0 points |  |
| 5 | Past Tense | 5 points | 2.5 points | | 0 points |  |
| 3 | Title Page | 3 points | 1.5 points | | 0 points |  |
| 2 | Table of Contents | 2 points | 1point | | 0 points |  |
| 15 | Introduction-  background research | 15 points | 7.5 points | | 0 points |  |
| 5 | Materials | 5 points | 2.5 points | | 0 points |  |
| 10 | Method of Collecting  Data | 10 points | 5 points | | 0 points |  |
| 10 | Results | 10 points | 5 points | | 0 points |  |
| 20 | **Discussion** | 20 points | 10 points | | 0 points |  |
| 10 | Conclusions | 10 points | 5 points | | 0 points |  |
| 5 | Acknowledgements | 5 points | 2.5 points |  | 0 points |  |
| 10 | Bibliography | 10 points | 5 points | 0 points |  |
|  | Appendix | Only if necessary. |  | |  |  |
| 100 |  |  |  | | Research Paper  Grade: |  |



Any topic that boils down to a simple preference or taste comparison. For example,"Which tastes better: Coke or Pepsi?"

Most consumer product testing of the "Which is best?" typeThis includes comparisons of popcorn, bubblegum,mak -up, detergents, cleaning products, and paper towels.

Any topic that requires people to recall things they did in the past. Effect of colored\_light on plants

Effect of music or talking on plants

Effect of running, music,video games, or almost anything on blood pressure

Effect of. color on memory, emotion, mood, taste, strength,etc. Any topic that requires ·measurements that will be extremely

difficult to make or repeat, given your equipment.

Graphology or handwriting analysis

Astrology or ESP

Any- topic that requires dangerous, hard to find, expensive, or illegal materials.

Any topic that requires drugging, pain, or injury to a live

Vertebrate animal.

Any topic that creates unacceptable risk (physical or psychological) to a human subject.

Any topic that involves collection of tissue samples from living humans or vertebrate-animals.

Such experiments don't involve the kinds of numerical measurements we want in a science fair project. They are more- of a survey than an experiment.

These projects only have scientific validity if the Investigator fully understands the science behind why the product works and applies that understanding to the experiment. While many consumer products are easy to use, the science behind them is often at the level of a graduate student in college·.

The data tends to be unreliable;

Several people do this project at almost every science fair. You can be more creative!

Difficult to measure.

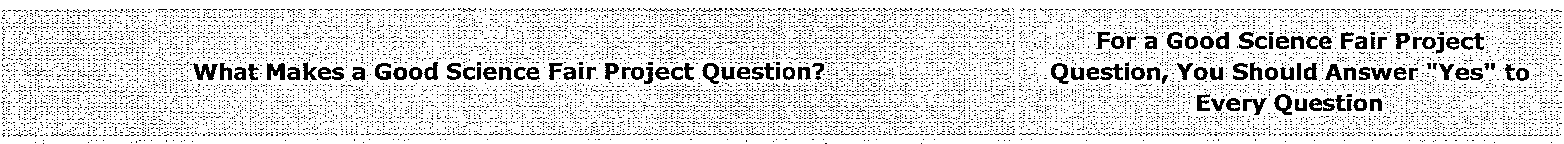
The result is either obvious (the heart beats faster whe·n you run)

or difficult to measure With proper controls (the effect of music). Highly subjective and difficult to measure.

Without measurement, you can't do science

Questionable scientific validity. No scientific validity.

Violates the rule iofvi\_rtually any science fair. Violates the- rules of Virtually any science fair. Violates the rules of virtually any science fair. Violates the rules of virtually any science fair.



Is the topic \_interesting enough to read about, then work on for the next couple-­

months?

Yes *I* No

Can you find at least 3 sources of written information on the subject? Yes *I* No

Can. you measure changes to the important factors (variables) using a number that represents a quantity- such as a count, percentage, length, width, weight,·voltaQe, velocity, energy,\_ time,\_ etc.?

Or, just as good, are you measuring a factor (variable) that is simply present or not

present? For example, Yes *I* No

• Lights. **ON** in on'e \_trial, then liQhts **OFF** in another trial,

• **USE** fertilizer in one trial, then **DON'T USE** fertilizer in another trial.

Can you design a "fair test" tO answer your question? In other words, can you change only one factor (variable) at a time, and control other factors that might influence your experiment, so that they do not interfere?

Yes *I* No

Is your experiment safe to peiforffi? Yes *I* No

Do you have all the materials and equipment'you need for your science fair project, or

will you be able to obtain them quickly and at a very low coSt? Yes *I* No

Do you have enough time to do your exPeriment more than once before· the science fc:iir?

Yes *I* No

\_ Does your science fair project meet all the rules and requirements for your science fair?

Yes *I* No

Have you checked to see if your scien·ce fair project will require SRC (Scientific Review

Commit\_tee) approval? Yes *I* No

Have \_you avoidedthe bad science fair project topic areas listed in the table above? Yes *I* No

**Agriscience Fair Tips**

The following suggestions were from the judges at the Agriscience Fair last year. First and Foremost: **The Log Book**

This is a record of the experiment from the start to finish.

Use a lined composition book that has bound pages and number the pages. Section the book and use colored tabs to label. The following is a suggestion:

Table of Contents

Schedule Notes Research Information

Supply Source Experiment Set-up Data

Results

Reflections

You do not have to use complete sentences but make certain it is clear, concise, and brief. Write everything that happens down, it may be insignificant then but iruportant later. When the judge reads your logbook, he should be able to replicate your experiment.

It is extremely important that you put all the steps. Detail the materials used and the procedures followed.

Experimentation: The more times you replicate your experiment the better. Ten trials are considered a minimum.

In conclusion make certain you use graphs, percentages or in some manner make the results easy to understand. '

Good Luck!

Science Fair

Backboard and Abstract Instructions

**Backboard:** Use the standard tri-fold board. You will be able to purchase these at any school supply or office supply store. You may also be able to find them at stores such as Wal-Mart and Target.

The following information should be included on your backboard:

1. **Title** – Choose a title that accurately describes your work, but also grabs peoples’ attention. Font size: I would suggest about 150. Your title should be large enough to read from across the room.
2. **Purpose –** Tell the reader what you are trying to figure out.
3. **Hypothesis**
4. **Variables –** State your independent and dependent variable
5. **Background Research** - summarize your background research. The judge will be able to look at your research paper for detailed information. All you want to do here is give a summary or general statement of your research.
6. **Material List** – Materials should be listed in a bulleted list – NO PARAGRAPHS
7. **Procedure** – Procedure should be in a numbered list. NO PARAGRAPHS! Your procedures should be very clear and concise. Remember…….. The judge wants to be able to understand what you did and how you did it.
8. **Data** – This is where you include your data charts and pictures.
9. **Analysis** – Include your graphs and a short written summary of your results. No more than two or three sentences.
10. **Conclusion** – State if you accept or reject your hypothesis. Follow up with a short explanation of what the data showed. You should ALSO include your ideas for future research (questions).

**Helpful Hints:**

Your backboard should be almost sterile – do not fill it with decorative artwork.

1. Font size suggestions:
   1. Title – 150 +
   2. Headings – 32 +
   3. Subheadings – 20 +
   4. Main Body Text – 16 – 18
   5. Captions – 12 – 16
2. No handwriting – Type all of your information on white paper. Make sure you proofread each sheet BEFORE you attach it.
3. Place colored paper behind the white paper containing your text to create a border.
   1. Tip – Use cover stock or card stock. These heavier papers will wrinkle less when you attach it to your display board.
4. Use a glue stick for attaching sheets of paper and lettering to your board.
5. Use double sided tape for items like photographs that may not stick to glue.

**If you have any questions, please e-mail me.**

HELPFUL WEBSITES

<http://school.discoveryeducation.com/sciencefaircentral/Getting-Started.html> -

extremely helpful website to guide students (and parents) through the process.

\* <http://www.societyforscience.org/isef/about/index.asp> - this website provides guidance for the project and all forms you will need to print out, complete, and return.

\* <http://www.sciencebuddies.org/> - a resource to guide you through the steps and help you to find an interesting topic.

\* <http://www.georgiacenter.uga.edu/oasp/ga_science_fair.phtml> - the official website for the Georgia Science and

Engineering Fair