



Illinois FFA AgriScience Fair Handbook

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Illinois FFA AgriScience Fair

The FFA Agriscience Fair is designed for students interested in scientific principles and emerging technologies in the agricultural industry. The Agriscience Fair provides middle and high school students the opportunity to achieve local, state and national recognition for their accomplishments in agriscience. This program also gives students a chance to demonstrate and display agriscience projects that are extensions of their agriscience courses. Participation begins at the local level and progresses to state and national levels.

GENERAL GUIDELINES:

To qualify for the Illinois FFA Agriscience Fair each participant must be a current dues paying FFA member in good standing with the local chapter, state FFA association and National FFA Organization during the school year in which the participant qualified to participate at the national level. Students must be in grades 7 - 12 and conduct a scientific research project pertaining to the agriculture and food science industries and, present their findings to a panel of judges with a display and a report during the Illinois FFA State Convention. A graduating senior is considered eligible to compete at the state and national level up to and including his/her first national convention following graduation.

HUMAN VERTEBRATE GUIDELINES:

The following policies will govern the use of human beings in agriscience fair research projects:

1. No projects involving human cultures of any type (mouth, throat, skin or otherwise) are allowed. However, tissue cultures purchased from reputable biological supply houses or research facilities are suitable for the student researcher(s) use.
2. Projects that involve taste, color, texture or any other choice are allowed, but are limited to preference only. Quantities of normal food and non-alcoholic beverages are limited to normal serving amounts or less. No project may use drugs, food or beverages in order to measure their effect on a person.
3. The only human blood that may be used is that which is either obtained through a blood bank, hospital or laboratory. No blood may be drawn by any person or from any person specifically for an agriscience project. This rule does not preclude student researcher(s) making use of the data collected from blood tests not made exclusively for an agriscience project.
4. Psychological, educational and opinion studies are allowed. Projects that involve learning, ESP, motivation, hearing and vision are also permitted (examples might include surveys, questionnaires, tests, etc.).
5. Data/record review studies in which the data is taken from preexisting data sets that are publicly available and/or published and do not involve any interaction with humans or the collection of any data from a human participant for the purpose of the research project are allowed.

6. No project will be allowed that is in violation of these rules. No person may perform any experiment for student researcher(s) that violates any of the rules.

NON-HUMAN VERTEBRATE GUIDELINES:

The following policies will govern the use of non-human vertebrates in agriscience fair research projects:

1. The use of vertebrate animals in agriscience projects is allowable under the conditions and rules below. Vertebrate animals are defined as:

- a. Live, nonhuman vertebrate mammalian embryos or fetuses.
- b. Tadpoles.
- c. Bird and reptile eggs within three days (72 hours) of hatching.
- d. All other non-human vertebrates (including fish) at hatching or birth.

2. Vertebrate animal studies may be conducted at a home, school, farm, ranch, in the field, etc. This includes:

- a. Studies of animals in their natural environment.
- b. Studies of animals in zoological parks.
- c. Studies of livestock that use standard agricultural practices.
- d. Studies of fish that use standard aquaculture practices.

3. Intrusive techniques used cannot exceed momentary pain and must comply with commonly accepted agriculture and livestock management procedures.

4. Student researcher(s) are prohibited from designing or participating in an experiment associated with the following types of studies on vertebrate animals:

- a. Induced toxicity studies with known toxic substances that could cause pain, distress or death, including but not limited to alcohol, acid rain, harmful chemicals, or heavy metals.
- b. Behavioral experiments using conditioning with aversive stimuli, mother/infant separation or induced helplessness.
- c. Studies of pain.
- d. Predator/vertebrate prey experiments.

5. Food and water cannot be used or withheld for more than 24 hours for maze running and other learning or conditioning activities.

6. The student researcher(s) and advisor have the responsibility to see that animals are properly cared for in a well-ventilated, lighted and warm location with adequate food, water and sanitary conditions. Care must be taken to see that organisms are properly cared for during weekends and vacation periods.

7. Livestock or fish raised for food using standard agricultural/ aquacultural production practices may be euthanized by a qualified adult for carcass evaluation.

8. No vertebrate animal deaths due to the experimental procedures are permitted in any group or subgroup.

- a. Studies that are designed or anticipated to cause vertebrate animal death are prohibited.

b. Any death that occurs must be investigated by a veterinarian or another professional qualified to determine if the cause of death was incidental or due to the experimental procedures. The project must be suspended until the cause is determined and then the results must be documented in writing.

c. If death was the result of the experimental procedure, the study must be terminated, and the study will not qualify for the National FFA Agriscience Fair.

9. Projects that involve behavioral studies or newly hatched chickens or other birds will be allowed, provided no change has been made in the normal incubation and hatching of the organism and all vertebrate rules are followed.

ACCESSIBILITY FOR ALL STUDENTS

All special needs requests and appropriate documentation as outlined in the special needs request policy must be submitted by May 15. Special needs policy & request form is located in the Appendix of this handbook.

APPLICATION PROCESS:

- Submit the AgriScience Fair Registration Form via Google Forms by April 15th. A link to the forms will be provided at the Illinois Association FFA website. When you register you need to have the following information available:
 - Your “Project Title”.
 - The AgriScience Fair “Division” in which your project will be competing.
 - The “Category” in which your research was conducted.
 - Your “Name” if an individual project or the names of both you and your research partner if this is a team project.
 - Your “E-mail Address” for communication from the fair chairman.
 - The name of your “FFA Chapter”. Team event entries require both student researchers to be from the same FFA Chapter.
 - Your “FFA Advisor’s Name”. If you have more than one advisor, use the one that supervised your research.
 - “Advisor’s E-mail Address”.
 - The “Purpose” of your research project (hypotheses). 500 character limit
 - The “Procedures” used in conducting your research. 1000 character limit

- Applications will be reviewed to:
 - Determine the agriculture relevance of the project
 - To insure projects are entered in the proper category and that the project is scientific in nature.Participants with projects that are accepted for the AgriScience Fair will be notified by May 15th.

SELECTING A DIVISION:

Students can compete in the AgriScience Fair as an individual or as a team. Each member and/or team may enter only one project. Exhibited projects and project reports will be the result of the students’ own efforts. A team is a maximum of two members working cooperatively on the same project.

- Division 1 - Individual member in grades 7 and 8
- Division 2 - Team of two members in grades 7 and 8
- Division 3 - Individual member in grades 9 and 10
- Division 4 - Teams of two members in grades 9 and 10
- Division 5 - Individual member in grades 11 and 12
- Division 6 - Team of two members in grades 11 and 12

Grade level is determined by the grade of the student at the time of application. Teams may consist of two students from different grades; however, the grade of the older student will be used to determine the division for competition.

SELECTING A CATEGORY:

Students must identify the appropriate category for their project. Any project that is placed in a questionable category will be submitted to the National FFA Organization for review prior to the Illinois FFA AgriScience Fair.

- ***Animal Systems***

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***

Environmental Service Systems: The study of systems, instruments and technology used to monitor and minimize the impact of human activity on environmental systems.

Natural Resource Systems: The study of the management, protection, enhancement and improvement of soil, water, wildlife, forests and air as natural resources.

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:

- Effects 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**

The study of product development, quality assurance, food safety, production, sales and service, regulations 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
- Effects of the amount of sucrose used in baked goods
- Use of a triangle test in sensory science

- **Plant Systems**

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**

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**

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 agricultural/natural resources
- Consumer confidence and understanding of food labels
- Economic effect of employment rate and meat consumption

Biotechnology Systems is the study of using data and scientific techniques to solve problems concerning living organisms with an emphasis on applications to agriculture, food and natural resource systems. Because of this, biotechnology research is incorporated into all categories listed depending on the study conducted. Biotechnology Systems is not its own category.

PROJECT COMPONENTS:

- **LOG BOOK**

The log book is one of the most important pieces of a research project. It will contain accurate and detailed notes of a well-planned, implemented research project. The notes should be a consistent and thorough record of the project. These notes will be the greatest aid when composing the written report.

- **WRITTEN REPORT**

As developing student researchers, the expectations for the written report are slightly different for Divisions 1 and 2 (7th and 8th grade students) compared to Divisions 3, 4, 5 and 6. The purpose of the rubric for Divisions 1 and 2 is to introduce young student researchers to the process of scholarly thinking. As the student researcher ages, skills grow and advance to utilize the rubric for Divisions 3-6 (grades 9-12).

Format of Report: *The written report template is required for state competition.*

The report should be printed on 8 1/2” x 11” white paper. The report will have 1” margins. Font size must be 12 using Times New Roman font. The report should be double spaced. The written report template for Division 1 & 2 can be found at

https://www.ffa.org/SiteCollectionDocuments/agriculture_written_report_template_divisions_1_2.zip

Division 3-6 can be found at

https://www.ffa.org/SiteCollectionDocuments/agriculture_written_report_template_divisions_3_6.zip

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
See Summary below.	<p>ABSTRACT</p> <p>A brief summary of the paper, which concisely describes the purpose, methods, results and conclusions. May include potential research applications or future research. Should not contain cited references. It should be no longer than one page and in paragraph form. Because this is the first page of the project report, it will be where the reader forms an opinion on the study. In the abstract, arrange the points as:</p> <ol style="list-style-type: none"> 1. Purpose 2. Procedure 3. Results 4. Conclusions <p>This section would include methods, results/ effects of major treatments, and main conclusions. Do not include discussion, citations and footnotes, or references to tables and figures.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>IMPORTANCE The importance answers the question “Why was the work done?” Provide an explanation of:</p> <ul style="list-style-type: none"> • Why the research topic is important to the agriculture industry • What problem the investigation attempts to solve <p>Each point should be addressed in a paragraph for a minimum of two paragraphs in the importance section.</p>	<p>INTRODUCTION The introduction answers the question “Why was the work done?” It provides background on the subject in several paragraphs. The introduction should clearly state the problem that justifies conducting the state the problem that justifies conducting the research, the purpose of the research, its impact on agriculture, the findings of earlier work and the general approach and objectives. You must cite sources for statements that are not common knowledge. The last paragraph of the introduction includes the objectives of the study.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>OTHER’S WORK The other’s work section details the information that currently exists concerning the research topic. What other information did the student researcher(s) read before conducting the project? What information did student researcher(s) look up during the investigation? Reference information regarding where the publication was found should be listed, then a brief summary should be written by the student researcher(s) for each publication. Publications could include articles about similar studies, similar research methods, history of the research area and any other items that support the current knowledge base for the research topic.</p>	<p>LITERATURE REVIEW The literature review should detail what information currently exists concerning the research project. Information in the review should be written in APA style and should include publications used for the research. Publications cited could include articles about similar studies, similar research methods, history of the research area and any other items that support the current knowledge base for the research topic and how the project might complement existing information.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>MATERIALS AND METHODS This section enables others to reproduce the results by duplicating the study. Write in first person, encompass all materials required and explain the study design by sharing the technical and experimental procedures used. If used, any statistical procedures are included here.</p>	<p>MATERIALS AND METHODS A well-written materials and methods section enables others to reproduce the results by replicating the study. Write in past tense, third person, encompass all materials required, state the hypothesis/research questions and explain the study design by sharing the technical and experimental procedures employed. With fieldwork, describe the study site. Include any statistical procedures employed.</p>

Division 1-2 (Grades 7-8)
<p>HYPOTHESIS/ANTICIPATED RESULTS The student researcher(s) state the hypothesis and/ or anticipated results. What are the expected results of the study?</p>



Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>RESULTS This section is a summary of the results, even if they are not what was hypothesized. Do not include discussion or conclusions about the data. Tell the reader exactly what was discovered and what patterns, trends or relationships were observed. Decide on the most meaningful way to present the data (tables, figures) and refer to them in the text. Data should be able to stand alone in the form of tables and/or figures. Data should not be added after the state level selection as it may alter the discussion and conclusions.</p>	<p>RESULTS This section is a summary of the results, even if they are not what was hypothesized. Do not include discussion or conclusions about the data. Tell the reader exactly what was discovered and what patterns, trends or relationships were observed. Decide on the most meaningful way to present the data (tables, figures) and refer to them in the text. Data should be able to stand alone in the form of tables and/or figures. Data should not be added after the state level selection as it may alter the discussion and conclusions.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>DISCUSSION In this section, the student researcher(s) should include information about the meaning of the results, how the results relate to the Other's Work section and what impact the study has on the agriculture industry</p>	<p>DISCUSSION AND CONCLUSIONS In this section, draw conclusions from the results of the study and relate them to the original hypothesis. It is helpful to briefly recap the results and use them as a foundation for the conclusions. If the results were not what was expected, take this opportunity to explain why. . Give details about the results and observations by elaborating on the mechanisms behind what happened. Tie the study in with the literature, but do not hesitate to offer sound reasoning of your own. Discussion should refer to facts and figures in the results section and provide recommendations for practice and future research. Discussion and conclusions should also address the impact the research has on the agriculture industry.</p>

Division 1-2 (Grades 7-8)
<p>CONCLUSIONS In the conclusion the student researcher(s) should share recommendations on what should be done or what should change as a result of the research. It is helpful to briefly recap the results and use them as a foundation for the conclusions. If the results were not what was expected, take this opportunity to explain why. The student researcher(s) should share what the next steps are to continue the study.</p>



Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>See Other's Work.</p>	<p>REFERENCES Only significant, published and relevant sources accessible through a library or an information system should be included. All citations in the text must be included in the reference section. When information or facts are used that are not common knowledge, give credit to the source of that information by citing a reference. Use the APA style recognized citation system throughout the report.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>SUMMARY The summary should be two to three paragraphs describing the study conducted. Describes why the student researcher(s) chose to conduct the study, why the study is important to the agriculture industry, how the student researcher(s) conducted the study, what the student researcher(s) found by conducting the study, and how the results apply within the agriculture industry</p>	<p>See Abstract.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>ACKNOWLEDGEMENTS Acknowledge anyone who helped in any aspect of the project in this section.</p>	<p>ACKNOWLEDGEMENTS Acknowledge anyone who helped in any aspect of the project in this section.</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>SKILL DEVELOPMENT The student researcher(s) select three appropriate competencies based on the study conducted. Two competencies must be from the study's primary pathway and the third can be from any pathway. The student researcher(s) demonstrate skills that are appropriate for the scope of the project. The project demonstrates application of skill attainment with measurable impact on the overall study.</p>	<p>SKILL DEVELOPMENT The student researcher(s) select five appropriate competencies based on the study conducted. Three competencies must be from the study's primary pathway and the other two can be from any pathway. The student researcher(s) demonstrate skills that are appropriate for the scope of the project. The project demonstrates application of skill attainment with measurable impact on the overall study</p>

Division 1-2 (Grades 7-8)	Division 3-6 (Grades 9-12)
<p>SPELLING/GRAMMAR The student researcher(s) should use correct spelling, complete sentences and proper grammar throughout the report.</p>	<p>APA STYLE/SPELLING The student researcher(s) should use correct spelling, complete sentences, proper grammar and appropriate APA style writing throughout the report.</p>

• **YOUR DISPLAY**

All projects must have the following information attached to the exhibit:

- Name of person(s) responsible for developing the project
- Chapter name, State
- Title of category entered
- Division entered (1, 2, 3, 4, 5, 6)

Digital printing of the poster display is recommended. It is recommended that the display is a stable flat display. Tri-fold poster boards are not recommended. The maximum size for a project is 48 inches wide by 30 inches deep (the distance from front to back) by 36 inches high (from top of table to top of display). Tables will be provided and will not exceed a height of 36 inches.

The student researcher(s) may also have the log book and up to five copies of the written report as part of the display. The log book and copies of the written report are optional. No additional props, handouts or electronics are permitted. No tablets, iPads, cell phones or other electronic devices will be permitted. Internet access will not be provided. Failure to meet these requirements will result in disqualification.

- ***YOUR INTERVIEW***

The interview is an opportunity for judges to ask you questions about your project. Interview and questions for Agriscience fair participants will normally be 5-10 minutes and not exceed 15 minutes.

A team project must be presented by a team of two. If only one team member is present, the team cannot rank higher than a white rating. Substitutions are not permitted and will cause disqualification. The interview portion is used to help judges determine both the extent to which you actually participated in the project and your knowledge gained.

All participants are required to meet face to face with the judges to explain their projects. Participants/teams unable to meet with judges during the allotted time will be disqualified. Substitutions are not permitted.

INFORMATION FOR THE DAY OF THE EVENT

The Illinois FFA AgriScience Fair will be held the Tuesday of the Illinois FFA State Convention. Official dress is required for this event.

Participants should bring at least two 3-ring binders with the following information included to the AgriScience Fair at the Illinois FFA State Convention for competition purposes:

- Project Report in the order designated in the National AgriScience Fair Application with the appropriate titles:
 - Title Page
 - Abstract
 - Introduction
 - Review of Literature (at least 6 pages in length recommended for the national level)
 - Materials & Methods
 - Results
 - Discussion and Conclusion
 - References (at least 12 references recommended for the national level)
 - Acknowledgements
 - Research Funding Page from National Application

As projects are judged, National entries will be identified. All National entries **MUST** turn in the following information in an envelope at that time. Materials should not be in binders, sheet protectors or any other presentation format. Materials should be stapled together.

Failure to have this envelope of information available at the AgriScience Fair will result in forfeiting the National Entry status.

- National AgriScience Fair Application - Completed with ALL signatures
- Project Report stapled in the order designated in the National AgriScience Fair Application with the appropriate titles:
 - Title Page
 - Abstract
 - Introduction
 - Review of Literature (at least 6 pages in length recommended for the national level)
 - Materials & Methods
 - Results
 - Discussion and Conclusion
 - References (at least 12 references recommended for the national level)
 - Acknowledgements

All National Finalist will have the opportunity to submit revisions to the Illinois FFA Center by June 25th or date set by the designated staff member.

Tentative Schedule of Events

- | | |
|------------------|--|
| 9:00-9:30 a.m. | Exhibitor & Judges Check-In in Designated Area - Students set up displays |
| 9:30-9:45 a.m. | Exhibitor Meeting with the AgriScience Fair Chairman for specific details of the event prior to judging. The Chairman should be made aware of any schedule conflicts at this time in order that accommodations can be addressed with judges. |
| 9:45-10:00 a.m. | Judges Meeting |
| 10:00-12:00 p.m. | Judging Process - Students will be judged by a qualified committee for their division and category ranking. Lunch will be provided to judges. |
| 12:30-1:00 p.m. | Final Category Winners Chosen |

Students must remain in the designated AgriScience Fair area until they are released by the AgriScience Fair Chairman in order to be considered for awards.

AWARDS:

The top blue-rated project for each division/category will be named a National Finalist Candidate for that area (if blue-rated). Additional special awards will be designated as funding is available.

Advisors will be notified via e-mail of their student's ranking following the event on Tuesday afternoon. All participants will be awarded with ribbons and medals for their participation in the AgriScience Fair based on the following score ratings:

- National Finalist Candidate Rating - Purple Rosette
- Blue Rating/Ribbon - score of 130-110 points
- Red Rating/Ribbon - score of 109-89 points
- White Rating/Ribbon - score of 88-0 points

Recognition at Tuesday Night Awards Dinner:

Successful participants will be recognized at the AgriScience Fair Awards Dinner to be held on Tuesday evening during the Illinois FFA State Convention. All participants, advisors and guests are invited to attend this event.

The following awards being presented:

- a. National Finalist Candidates
- b. Special Awards - as funding allows

Instructions for National Finalist Candidates:

To be named a National Finalist Candidate for the Illinois FFA AgriScience Fair, student(s) must receive a blue rating for their project, be selected as the top project in their Division/Category, and turn in the following information in an envelope at that time. Materials should not be in binders, sheet protectors or any other presentation format. Materials should be stapled together. **Failure to have this envelope of information available at the AgriScience Fair will result in forfeiting the National Finalist Candidate status.**

- National AgriScience Fair Application - Completed with ALL signatures
 - Cover Page
 - Adult Sponsor Checklist
 - Hazardous Materials
 - Human Vertebrates
 - Non-Human Vertebrates
 - Skill Development Form - 500 character limit - 3 primary/2 supporting skills
 - Research Funding
 - Abstract/Summary
 - Written Report Uploaded - REQUIRED - 10 MB limit - pdf format
 - If uploaded correctly you will get a "File Uploaded" message on screen
 - Click "Generate with Written Report" to print application that includes the written report.
 - Project Extension Form (if needed)

All National Finalist will have the opportunity to submit revisions to the Illinois FFA Center by date set by the designated staff member.

Illinois Association FFA Staff will review materials and declare Illinois FFA's National Entries. After the entries are declared on-line by state staff, students must be certified on the National AgriScience Fair Application on the Advisor Approval Tab on the advisor's dashboard when logged in on the National FFA Website by July 10th.

The Illinois Association FFA Executive Secretary will:

1. Sign the National Applications
2. Complete the Manual Checklist generated from the National AgriScience Fair Application
3. Submit applications to the National FFA Organization by the deadline assigned.

If student projects are selected as one of the Top 12 in their respective category during pre-qualifying national judging, they will be invited to compete at the National AgriScience Fair during the National FFA Convention in the fall.

Appendix:

Rubric for Division 1 & 2

Rubric for Division 3-6

Judges Comment Sheet Division 1 & 2

Judges Comment Sheet Division 3-6

APA FORMAT HELPER

SPECIAL NEEDS POLICY & REQUEST FORM - emailed John & Mindy about this on 7/9/17

Division 1 & 2 Score Sheet/Rubric (Grades 7 & 8)

Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Importance	The importance includes a one paragraph answer for each question that clearly answers: • Why is the topic important to the agriculture industry? • What problem does the investigation solve for agriculture?	The importance includes a one paragraph answer for each question that vaguely answers: • Why is the topic important to the agriculture industry? • What problem does the investigation solve for agriculture?	The importance includes a one paragraph answer for each question that poorly answers: • Why is the topic important to the agriculture industry? • What problem does the investigation solve for agriculture?	10	_____ x 2 = _____
Other's Work	Clearly details what information currently exists concerning the research project. Reference where the information was found (website, book, article, etc.,) is listed, then a paragraph written by the student researcher(s) clearly describing the reference and information it provided for each publication used.	Poorly details what information currently exists concerning the research project. Reference where the information was found (website, book, article, etc.,) is listed, then a paragraph written by the student researcher(s) vaguely describes the reference and information it provided for each publication used.	Does not detail what information currently exists concerning the research project. Reference where the information was found (website, book, article, etc.,) is listed, then a paragraph written by the student researcher(s) poorly describes or is not included on what the reference says for each publication used.	10	_____ x 2 = _____
Materials and Methods	Clearly written to enable others to replicate the study and results. Section is written in first person and encompasses all materials required. If used, the statistical procedures are included.	Not written clearly to enable others to replicate the study and results. Section may or may not be written in first person and encompasses all materials required. The statistical procedures are included but are unclear.	Written poorly so that others cannot replicate the study and results. Section is not written in first person and does not encompass all materials required. The statistical procedures are not included.	10	_____ x 2 = _____
Hypothesis/Anticipated Results	Student researcher(s) clearly state the hypothesis and/or anticipated results	Student researcher(s) vaguely state the hypothesis and/or anticipated results.	Student researcher(s) do not state or poorly state the hypothesis and/or anticipated results.	5	
Results	Written results of the project are summarized. Trends and relationships are clearly addressed. No conclusions are made in this section. Data that can stand alone in the form of tables and/or figures are included.	Written results of the project are incompletely summarized. Trends and relationships are vague. No conclusions are made in this section. Data that can stand alone in the form of tables and/or figures are sometimes included.	Written results of the project are poorly summarized. Trends and relationships are not addressed. Data is not appropriately included as tables and figures.	20	_____ x 4 = _____
Total Score From Page 1 of Score Sheet (55 points possible)					

Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Discussions	The discussion includes clear, detailed answers for each question: • What do the results of the study mean? • How are they related to what others found in the "Other's Work" section?	The discussion includes vague answers for each question: • What do the results of the study mean? • How are they related to what others found in the "Other's Work" section?	The discussion poorly answers each question: • What do the results of the study mean? • How are they related to what others found in the "Other's Work" section?	10	<hr/> x 2 = <hr/>
Conclusions	The conclusion clearly states what should be done and/or changed as a result of the research. Clearly states what the next steps are to continue the research.	The conclusion vaguely states what should be done and/or changed as a result of the research. The next steps for research are unclear	The conclusion poorly states what should be done and/or changed as a result of the research. The next steps for research are not included.	10	<hr/> x 2 = <hr/>
Summary	The summary is two to three paragraphs describing the study conducted. Describes why the student researcher(s) chose to conduct the study, why the study is important to the agriculture industry, how the study was conducted, what was found by conducting the study, and how the results apply within the agriculture industry.	The summary is two to three paragraphs vaguely describing the study conducted. Vaguely describes why the student researcher(s) chose to conduct the study, why the study is important to the agriculture industry, how the study was conducted, what was found by conducting the study, and how the results apply within the agriculture industry	The summary is two to three paragraphs that poorly describes the study conducted. Why the student researcher(s) chose to conduct the study, why the study is important to the agriculture industry, how the study was conducted, what was found by conducting the study, and how the results apply within the agriculture industry is unclear.	5	
Acknowledgements	Detailed list or paragraph is included acknowledging anyone who assisted with any aspect of the project and how they helped.	A list or paragraph is included acknowledging anyone who assisted with any aspect of the project.	A list or paragraph is not included acknowledging anyone who assisted with any aspect of the project and how they helped.	5	
Spelling/ Grammar	A list or paragraph is not included acknowledging anyone who assisted with any aspect of the project and how they helped.	Student researcher(s) use complete sentences; minor spelling or grammar errors present.	Student researcher(s) do not use complete sentences; excessive spelling or grammar errors present.	5	
Total Score From Page 2 of Score Sheet (35 points possible)					

INTERVIEW RUBRIC - DIVISIONS 1-2					
Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Knowledge Gained	There is evidence the student researcher(s) have acquired scientific skills and/or knowledge by doing the project. The student researcher(s) exhibit knowledge of the scope and limitations of the problem selected.	There is some evidence that the student researcher(s) have acquired scientific skills and/or knowledge by doing this project. The student researcher(s) have limited knowledge of the scope and limitations of the problem selected.	There is no evidence that the student researcher(s) have acquired scientific skills and/or knowledge by doing this project. The student researcher(s) do not recognize the scope and limitations of the problem selected.	10	_____ x 2 =
Thoroughness/ Information	Student researcher(s) clearly communicate the study. Facts and principles the student researcher(s) state are correct and accurate. All results of the experiments are reported accurately based on methodology used. Any errors and weaknesses are identified, if applicable.	Student researcher(s) partially communicate the study. Facts and principles the student researcher(s) state are partially correct and accurate. Most results of the experiments are reported accurately based on methodology used. Most errors and weaknesses are identified, if applicable.	Student researcher(s) do not communicate the study. Facts and principles the student researcher(s) state are inaccurate. Results of the experiments are not reported accurately based on methodology used. Errors and weaknesses are not identified.	20	_____ x 4 =
Visual Display	The data is presented in the best manner for the information involved. No spelling errors present. The exhibit demonstrates general neatness and attractiveness. The display is interesting.	The data is presented in a logical manner. Some spelling errors are present. The exhibit lacks general neatness and attractiveness. The display uninteresting.	The data is not presented in a rational manner for the particular type of information involved. Several spelling errors are present. The exhibit lacks general neatness and attractiveness. The display is uninteresting	10	_____ x 2 =
Total Score From Page 3 of Score Sheet (40 points possible)					
Points Page 1 _____ + Points Page 2 _____ + Points Page 3 _____					
TOTAL SCORE (130 points possible)					
Blue Rating = 130-110 points Red Rating = 109-89 points White Rating= 88-0 points (Projects must earn at least a blue rating to be selected as a National Entry for the National AgriScience Fair. If you feel the project is worthy of this status, please be sure the score is reflective of a blue rating.)					

Division 3-6 Score Sheet/Rubric (Grades 9-12)

Student(s) _____ Chapter: _____

Category: _____ Division: _____

Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Abstract	Abstract is brief and concisely describes the purpose, methods, results and conclusions. Abstract does not include cited references. Abstract is no longer than one page. Arrangement makes the purpose, procedure, results and conclusions clear	Abstract describes the purpose, methods, results and conclusions. Abstract does not include cited references. Abstract is longer than one page. Arrangement makes the purpose, procedure, results and conclusions vague.	Abstract poorly describes the purpose, methods, results and conclusions. Abstract includes cited references. Abstract is longer than one page. Arrangement makes the purpose, procedure, results and conclusions unclear.	5	
Introduction	Introduction answers the question "Why was the work done?" It clearly states the problem that justifies conducting the research, the purpose of the research, its impact on agriculture, the findings of earlier work and the general approach and objectives.	Introduction answers the question "Why was the work done?" It vaguely states the problem that justifies conducting the research, the purpose of the research, its impact on agriculture, the findings of earlier work and the general approach and objectives.	Introduction does not answer the question "Why was the work done?" It does not state the problem that justifies conducting the research, the purpose of the research, its impact on agriculture, the findings of earlier work and the general approach and objectives.	10	$\frac{\quad}{\quad} \times 2 =$
Literature Review	The literature review details what information currently exists concerning the research project. The information includes materials used in the research and material cited such as articles about similar studies, similar research methods, history of the research area and other items that support the current knowledge base for the topic and how the project might complement existing information.	The literature review poorly details what information currently exists concerning the research project. The information may or may not include materials used in the research. Some materials cited includes articles about similar studies, similar research methods and history of the research area. How the project might complement existing information is not clear	The literature review does not detail what information currently exists concerning the research project. There is no information included or it does not reference materials used in the research. No information cited such as articles about similar studies, similar research methods, or history of the research area. How the project might complement existing information is not clear.	10	$\frac{\quad}{\quad} \times 2 =$
Materials and Methods	Clearly written to enable others to replicate the study and results. Section is written in first person and encompasses all materials required.	Not written clearly to enable others to replicate the study and results. Section may or may not be written in first person and encompasses all materials required.	Written poorly so that others cannot replicate the study and results. Section is not written in first person and does not encompass all materials required.	15	$\frac{\quad}{\quad} \times 3 =$
Total Score From Page 1 of Score Sheet (40 points possible)					

Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Results	Written results of the project are summarized. Trends and relationships are clearly addressed. No conclusions are made in this section. Data that can stand alone in the form of tables and/or figures are included.	Written results of the project are incomplete. Trends and relationships are vague. No conclusions are made in this section. Data that can stand alone in the form of tables and/or figures are sometimes included.	Written results of the project are poorly summarized. Trends and relationships are not addressed. Data is not appropriately included as tables and figures.	15	<hr/> x 3 = <hr/>
Discussions & Conclusions	Brief recap of the results is included. Sound reasoning is shown that conclusions are based on results, incorporates previous literature and relates directly to the hypothesis. Discussion refers/references to facts and figures in results section and provides recommendations for practice, future research and the impact on the agriculture industry.	Brief recap of the results is included and shows how they were the foundation of the study. Unsound reasoning is shown, vaguely incorporates previous literature and partially relates to the hypothesis.	No recap of the results is included or poorly shows the foundation for the study. Conclusions are not based on results, previous literature and do not relate directly to the hypothesis. Discussion poorly refers/references to facts and figures in the results section.	15	<hr/> x 3 = <hr/>
Acknowledgements	Detailed list or paragraph is included acknowledging anyone who assisted with any aspect of the project and how they helped.	A list or paragraph is included acknowledging anyone who assisted with any aspect of the project.	A list or paragraph is not included.	5	
References	References contain significant, published and relevant sources.	References listed are somewhat significant, published and relevant sources.	References listed are not significant, published and relevant sources.	5	
APA Style /Spelling	APA citation style is used. No spelling or grammar errors are present.	APA citation style is used. Minor spelling or grammar errors are present.	APA citation style is not used. Minor spelling or grammar errors are present.	5	
Scientific Research	The problem is clearly stated. The student researcher(s) are aware of the basic scientific principles. The research is the basis for further study. The appropriate methods and scientific design have been applied. The student researcher(s) are aware of the empirical method and the importance of controlling the variables in order to reach valid conclusions.	The problem is not clearly stated. The student researcher(s) have limited knowledge of the basic scientific principles. With some modification, the research could be the basis for further study. Some appropriate methods and scientific design have been applied. The student researcher(s) are partially aware of the empirical method and controlling the variables.	The problem is not stated. The student researcher(s) are unaware of the basic scientific principles. The research cannot be the basis for further study. Inappropriate methods and a flawed scientific design have been applied. The student researcher(s) are unaware of the empirical method and do not recognize the importance of controlling the variables.	10	<hr/> x 2 = <hr/>
Total Score From Page 2 of Score Sheet (55 points possible)					

INTERVIEW RUBRIC - DIVISIONS 3-6					
Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Knowledge Gained	There is evidence the student researcher(s) have acquired scientific skills and/or knowledge by doing the project. The student researcher(s) exhibit knowledge of the problem selected.	There is some evidence that the student researcher(s) have acquired scientific skills and/or knowledge by doing this project. The student researcher(s) have limited knowledge of the problem selected.	There is no evidence that the student researcher(s) have acquired scientific skills and/or knowledge by doing this project. The student researcher(s) do not recognize the scope of the problem selected.	15	_____ x 3 =
Thoroughness/ Information	Student researcher(s) clearly communicate the study. Facts and principles the student researcher(s) state are correct and accurate. All results of the experiments are reported accurately based on methodology used. Any errors and weaknesses are identified, if applicable.	Student researcher(s) partially communicate the study. Facts and principles the student researcher(s) state are partially correct and accurate. Most results of the experiments are reported accurately based on methodology used. Most errors and weaknesses are identified, if applicable.	Student researcher(s) do not communicate the study. Facts and principles the student researcher(s) state are inaccurate. Results of the experiments are not reported accurately based on methodology used. Errors and weaknesses are not identified.	10	_____ x 2 =
Visual Display	The data is presented in the best manner for the information involved. No spelling errors present. The exhibit demonstrates general neatness and attractiveness. The display is interesting.	The data is presented in a logical manner. Some spelling errors are present. The exhibit lacks general neatness and attractiveness. The display uninteresting.	The data is not presented in a rational manner for the particular type of information involved. Several spelling errors are present. The exhibit lacks general neatness and attractiveness. The display is uninteresting	10	_____ x 2 =
Total Score From Page 3 of Score Sheet (35 points possible)					
Points Page 1 _____ + Points Page 2 _____ + Points Page 3 _____					
TOTAL SCORE (130 points possible)					
Blue Rating = 130-110 points Red Rating = 109-89 points White Rating= 88-0 points					
(Projects must earn at least a blue rating to be selected as a National Entry for the National AgriScience Fair. If you feel the project is worthy of this status, please be sure the score is reflective of a blue rating.)					

**Judges Comment Sheet to Be Returned to Students
DIVISION 1-2 (7th & 8th Grade)**

Area	Comments
Importance	
Other's Work	
Materials & Methods	
Hypothesis/ Anticipated Results	
Results	
Discussions	
Conclusions	

Summary	
Acknowledgement	
Spelling/Grammar	
Knowledge Gained	
Thoroughness/ Information	
Visual Display	

Overall Judge's Comments:

Judges Comment Sheet to Be Returned to Students
DIVISION 3-6 (9th-12th Grade)

Area	Comments
Abstract	
Introduction	
Literature Review	
Materials & Methods	
Results	
Discussions & Conclusions	
Acknowledgements	
References	

APA Style/Spelling	
Scientific Research	
Knowledge Gained	
Thoroughness/ Information	
Visual Display	

APA Format Examples

Books

Author's last name, first initial. (Publication date). *Book title*. Additional information. City of publication: Publishing company.

Example:

Allen, T. (1974). *Vanishing wildlife of North America*. Washington, D.C.: National Geographic Society.

Encyclopedia & Dictionary

Author's last name, first initial. (Date). Title of Article. *Title of Encyclopedia* (Volume, pages). City of publication: Publishing company.

Example:

Bergmann, P. G. (1993). Relativity. In *The new encyclopedia britannica* (Vol. 26, pp. 501-508). Chicago: Encyclopedia Britannica.

Magazine & Newspaper Articles:

Author's last name, first initial. (Publication date). Article title. *Periodical title, volume number(issue number if available)*, inclusive pages.

Example:

Harlow, H. F. (1983). Fundamentals for preparing psychology journal articles. *Journal of Comparative and Physiological Psychology*, 55, 893-896.

Website or Webpage

Online periodical:

Author's name. (Date of publication). Title of article. *Title of Periodical*, volume number, Retrieved month day, year, from full URL

Online document:

Author's name. (Date of publication). *Title of work*. Retrieved month day, year, from full URL

Note: When citing Internet sources, refer to the specific website document. If a document is undated, use "n.d." (for no date) immediately after the document title. Break a lengthy URL that goes to another line after a slash or before a period. Continually check your references to online documents. There is no period following a URL.

Note: If you cannot find some of this information, cite what is available.

Example:

Dove, R. (1998). Lady freedom among us. *The Electronic Text Center*. Retrieved June 19, 1998, from Alderman Library, University of Virginia website:
<http://etext.lib.virginia.edu/subjects/afam.html>