

AGRISCIENCE FAIR

Texas FFA Convention

Revised March 17, 2020

1. Teachers must submit any and all Agriscience Fair applications, research papers and related documents for the Texas Agriscience Fair on www.theaet.com . All approved and submitted applications will be charged a \$60 entry fee. The entry fee will be added to each participating chapters Texas FFA Convention invoice which is accessed by logging into the Texas FFA Roster Management System. The completed teacher approved application, research paper and other related documents is due no later than 11:59 pm, 21 days prior to check-in on Monday at convention. **DUE TO THE PRE-EVENT JUDGING SCHEDULE, LATE ENTRIES CANNOT BE ACCEPTED.** For additional details, please contact Dr. Rudy Ritz, the Texas FFA Agriscience Fair Superintendent (rudy.ritz@ttu.edu or 806.742.2816).
2. Competition is open to all FFA members in grades 7-12. Eligibility of each participant will be verified by checking the chapter's FFA roster. Students must be:
 - a. A secondary education (grades 7-12) FFA member during the school year in which the participant qualified to participate at the state level. 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.
 - b. Enrolled in at least one agricultural education course during the school year in which the participant qualified to participate at the state level and/or follow a planned course of study. Either course must include a supervised agricultural experience program, the objective of which is preparation for an agricultural career.
3. All students shall be in official FFA dress, but according to Texas FFA Official Dress Standards, which includes black dress boots. Complete Official Dress Guidelines can be found at www.texasffa.org – About- Official Dress. Hair accessories and jewelry are acceptable. Visible socks must be black. Students not in full compliance of official dress standards shall be notified before entering the event room and given opportunity to correct the deficiency as long as such remedial action does not disrupt the event schedule. Members who fail to comply will not be allowed to compete.
4. There are six divisions in each category:
 - a. Division 1 - individual member in grades 7 and 8.
 - b. Division 2 - team of two members in grades 7 and 8.
 - c. Division 3 - individual member in grades 9 and 10.
 - d. Division 4 - team of two members in grades 9 and 10.
 - e. Division 5 – individual member in grades 11 and 12.
 - f. Division 6 – team of two members in grades 11 and 12.

NOTE: The written report Divisions 1-2 have different requirements. Refer to pages 23-26 in Agriscience Fair Program Handbook 2017-2021.

5. There are six categories. The Environmental Services/Natural Resource Systems (ENR) category will be combined in 2017. Depending on participation at the National Level, it may be split in the future.

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 agricultural/natural resources

6. Participants are limited to one entry. Grade is determined by the age of the member before completing the school year immediately preceding the State FFA Convention. Each student and/or team of students may enter only one project. A team is defined as **two** members working cooperatively on the same project. Successive year projects must indicate a change or growth in the project from the previous year. There is no limit to the number of participants a chapter may submit. Upon receipt of research papers, the contest superintendent may suggest a category change for project. Category changes will be done with the mutual agreement of the agricultural science teacher and contest superintendent. Category changes will not be made on-site.
7. Interview times with the judging panel will be posted by 4:00 p.m. on the day of set-up. Interviews may not exceed fifteen (15) minutes. Judging times for each participant will be posted at the set-up site. Projects of like category and division will be judged consecutively as a group unless precluded by scheduling conflicts. Students with conflicts due to participation in other events will need to notify the agriscience fair coordinator during set-up to arrange alternative judging time. Students who are late for their interview appointment will not receive credit for interview or display portion of the evaluation sheet. Contest officials and participants only are allowed in event area during project judging. The National FFA Agriscience Fair Program Handbook 2017-2021 provides safety and relevant display information on pages 27-28.

8. Each exhibit should include information relevant to the study. Agriscience fair participant(s)' display show the results of the study utilizing a display board no larger than the provided dimensions of:
- 36 inches high (from top of table to top of display).
 - 48 inches wide.
 - 30 inches deep (the distance from front to back).

The complete display, which includes methods of attaching as needed (easel, stand, etc.) cannot exceed the dimensions of:

- 38 inches high (from top of table to top of display)
- 50 inches (width)
- 30 inches deep (the distance from back to front)

The display must consist of a stable, free-standing display board on the provided table top not to exceed the sizes outlined above. **No props, logbooks, 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. Please note that the width of tables vary per convention location and are generally 24" wide.

9. All projects must have the following information attached to the exhibit: Name of Agriscience fair participant(s), chapter name and location (city), title of category, and division (1,2,3,4,5 or 6).
10. The events will be judged on Tuesday of the Texas FFA Convention. Judging start time will be posted in the convention program.
11. Applications and reports will be checked for plagiarism. An agriscience fair project must be the result of a student's own effort and ability. However, in securing information such as direct quotes or phrases, specific dates, figures or other materials, that information must be marked and identified appropriately. **Non-compliance represents plagiarism and will automatically disqualify a participant(s).**

Student researcher(s) may not:

- In any way falsify a permission form, scientific paper or display.
 - Use another person's results or thoughts as their own even with the permission of this person. This includes work done by a family member or a mentor.
 - Use information or data obtained from the internet without proper citation.
 - Re-enter a project with only minor changes.
12. Results will be announced at an awards reception open to all agriscience participants, their advisors and parents. First place winners in all divisions/categories will receive a banner and plaque(s). Second and third place winners in each division/category will receive a banner and medal(s). In addition, first place winners will be recognized on stage during a general session. Specific instructions relating to the recognition session and awards seating will be given at the awards reception.
13. Once a student places in the top three at the National FFA contest (example, Plant Systems Division 1), he/she can no longer compete in that division of that category regardless of the research subject.

Example: If a student wins Animal Systems Division 1 as a 7th grader, they can no longer participate in that Division.

They can compete in Animal Systems Division 2 as an 8th grader or even Animal Systems Division 5 as an 11th grader.

- Students who wish to continue research on the same topic or who have won a division and category are encouraged to seek additional recognition using the proficiency award or star award.
 - If a student wishes to continue with the same research, at least one variable must be changed and the data must be from the current year.
 - Students may compete in another agriscience research category within the agriscience fair.
 - Students may not participate in more than one category and division of the agriscience fair each year.
14. In cases of question, National FFA rules will prevail. A three-person committee may be used to settle disputes. Policies regarding protests will be in effect.

Texas FFA Association Inclement Weather Policy

Inclement Weather

For state events, the state executive director shall work proactively with providers to assess potential weather and road hazards which could create travel risks for students and teachers. Should inclement weather pose a potential travel risk for groups from any part of the state, the executive director shall consult the state executive board and appropriate experts (such as but not limited to National Weather Service forecasters) to assess potential hazards and consider options for amending event start times or participation schedules to facilitate safer travels, event postponement or cancellation. The Texas FFA Association shall make student safety the top priority in all such decisions.

If possible, the executive director or his or her designee shall notify teachers via e-mail and/or the emergency text messaging system of any impending event decisions regarding inclement weather.

District and area associations are to work with their respective executive committees in assessing weather-related travel risks. The state executive director shall work with area event coordinators in adjusting state entry and material submission deadlines for area events postponed due to inclement weather.

Lightning Safety

Lightning may be the most frequently encountered severe storm hazard endangering physically active people each year. Millions of lightning flashes strike the ground annually in the United States, causing nearly 100 deaths and 400 injuries. Three quarters of all lightning casualties occur between May and September, and nearly four fifths occur between 10:00 am and 7:00 pm, which coincides with the hours for most career development events held in field conditions.

Providers should postpone or suspend activity if a thunderstorm appears imminent before or during an activity or contest (irrespective of whether lightning is seen or thunder heard) until the hazard has passed. Signs of imminent thunderstorm activity are darkening clouds, high winds, and thunder or lightning activity. Student safety must be the first priority. If the provider deems it necessary to collect and hold scan sheets, students must be moved to a safe location before such collections are conducted.

Recommendations for Lightning Safety

1. Establish a chain of command that identifies who is to make the call to remove individuals from the field.
2. Name a designated weather watcher (A person who actively looks for the signs of threatening weather and notifies the chain of command if severe weather becomes dangerous). Lightning meters are recommended but not required. Most athletic departments own these meters.
3. Have a means of monitoring local weather forecasts and warnings.
4. Designate a safe shelter for each venue that can accommodate the anticipated number of contestants. See examples below.
5. Use the Flash-to-Bang count to determine when to go to safety. By the time the flash-to-bang count approaches thirty seconds all individuals should be already inside a safe structure. See method of determining Flash-to-Bang count below.
6. Once activities have been suspended, wait at least thirty minutes following the last sound of thunder or lightning flash prior to resuming an activity or returning outdoors.
7. Avoid being the highest point in an open field, in contact with, or proximity to the highest point, as well as being on the open water. Do not take shelter under or near trees, flagpoles, or light poles.
8. Assume that lightning safe position (crouched on the ground weight on the balls of the feet, feet together, head lowered, and ears covered) for individuals who feel their hair stand on end, skin tingle, or hear "crackling" noises. Do not lie flat on the ground.
9. Observe the following basic first aid procedures in managing victims of a lightning strike:
 - Activate local EMS
 - Lightning victims do not "carry a charge" and are safe to touch.
 - If necessary, move the victim with care to a safer location.
 - Evaluate airway, breathing, and circulation, and begin CPR if necessary.
 - Evaluate and treat for hypothermia, shock, fractures, and/or burns.
10. All individuals have the right to leave a career development event site in order to seek a safe structure if the person feels in danger of impending lightning activity, without fear of repercussions or penalty from anyone.

Definitions

Safe Shelter:

1. A safe location is any substantial, frequently inhabited building. The building should have four solid walls (not a dug out), electrical and telephone wiring, as well as plumbing, all of which aid in grounding a structure.
2. The secondary choice for a safer location from the lightning hazard is a fully enclosed vehicle, including a school bus, with a metal roof and the windows completely closed. It is important to not touch any part of the metal framework of the vehicle while inside it during ongoing thunderstorms.
3. It is not safe to shower, bathe, or talk on landline phones while inside of a safe shelter during thunderstorms (cell phones are considered safe).

Flash-to-Bang:

To use the flash-to-bang method, begin counting when sighting a lightning flash. Counting is stopped when the associated bang (thunder) is heard. Divide this count by five to determine the distance to the lightning flash (in miles). For example, a flash-to-bang count of thirty seconds equates to a distance of six miles. Lightning has struck from as far away as 10 miles from the storm center.

Written Paper Scoresheet: Divisions 1-2 (Grades 7-8)

STUDENT RESEARCHER(S)

STATE

CATEGORY

DIVISION

Area		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?	10	
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.	15	
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.	10	
Hypothesis/ Anticipated Results	Student researcher(s) clearly states 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.	20	
Discussion	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?	10	
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.	10	
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.	5	
Acknowledgements	Detailed list or paragraph is included acknowledging anyone who assisted with any aspect of the project and how they helped.	5	
Skill Development (This is in the application only – not in the paper)	All three competencies (two from primary pathway, one from any other pathway) demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with significant measurable impact on the overall project.	5	
Spelling/Grammar	Student researcher(s) use complete sentences; no spelling or grammar errors present.	5	
TOTAL SCORE (100 POINTS POSSIBLE) This constitutes 50% of the overall score to determine final ranking			

Written Paper Rubric: Divisions 1-2 (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.	15	_____ x 3 = _____
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 = _____

Written Paper Rubric: Divisions 1-2 (Grades 7-8) continued

Area	High Points 5-4 points	Medium Points 3-2 points	Low Points 1-0 points	Points Possible	Points Earned
Discussion	The discussion includes clear, detailed answers for each question: - What do the results of the studymeans? - 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 studymeans? - 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 studymeans? - How are they related to what others found in the “Other’s Work” section?	10	x2 =
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	x2 =
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	
Skill Development (This is in the application only – not in the paper)	All three competencies (two from primary pathway, one from any other pathway) demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with significant measurable impact on the overall project.	Some of the competencies somewhat demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with incomplete measurable impact on the overall project.	Very few competencies are listed and are not appropriate for the scope of the research project. The project does not demonstrate application of skill attainment and has no measurable impact on the overall project.	5	
Spelling/ Grammar	Student researcher(s) use complete sentences; no spelling or grammar errors present.	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 (100 POINTS POSSIBLE)

This constitutes 50% of the overall score to determine final ranking

Written Paper Scoresheet: Divisions 3-6 (Grades 9-12)

STUDENT RESEARCHER(S)

STATE

CATEGORY

DIVISION

Area		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.	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.	10	
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.	10	
Materials and Methods	Clearly written to enable others to replicate the study and results. Section is written in third person, encompasses all materials required, states the hypothesis and explains the study design. If used, the statistical procedures are included.	15	
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.	20	
Discussion and Conclusions	Brief recap of the results is included and shows how they were the foundation of the study. 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.	20	
References	References contain significant, published and relevant sources.	5	
Acknowledgements	Detailed list or paragraph is included acknowledging anyone who assisted with any aspect of the project and how they helped.	5	
Skill Development (This is in the application only – not in the paper)	All five competencies (three from primary pathway, two from any other pathway) demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with significant measurable impact on the overall project.	5	
APA Style/Spelling	APA citation style is used. No spelling or grammar errors are present.	5	
TOTAL SCORE (100 POINTS POSSIBLE) This constitutes 50% of the overall score to determine final ranking			

Written Paper Rubric: Divisions 3-6 (Grades 9-12)

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	_____ x 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	_____ x 2 = _____
Materials and Methods	Clearly written to enable others to replicate the study and results. Section is written in third person, encompasses all materials required, states the hypothesis and explains the study design. 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 third person, encompasses all materials required, states the hypothesis and explains the study design. The statistical procedures are included but are unclear.	Written poorly so others cannot replicate the study and results. Section is not written in third person, does not encompass all materials required for the research and hypothesis is not stated. The statistical procedures are not included.	15	_____ x 3 = _____

Written Paper Rubric: Divisions 3-6 (Grades 9-12) continued

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 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 =
Discussion and Conclusions	Brief recap of the results is included and shows how they were the foundation of the study. 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 that conclusions are based on results, vaguely incorporates previous literature and partially relates 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.	No recap of the results is included or poorly shows how they were 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 and does not provide recommendations for practice, future research and does not illustrate the impact on the agriculture industry.	20	x4 =
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	
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	
Skill Development (This is in the application only – not in the paper)	All five competencies (three from primary pathway, two from any other pathway) demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with significant measurable impact on the overall project.	Some of the competencies somewhat demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with incomplete measurable impact on the overall project.	Very few competencies are listed and are not appropriate for the scope of the research project. The project does not demonstrate application of skill attainment and has no measurable impact on the overall project.	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. Excessive spelling or grammar errors are present.	5	

TOTAL SCORE (100 POINTS POSSIBLE)

This constitutes 50% of the overall score to determine final ranking

Interview Scoresheet: Divisions 1-6 (Grades 7-12)

Area		Points Possible	Points Earned
Knowledge Gained	Is there evidence the student researcher(s) have acquired scientific skills and/or knowledge by doing this project? Do the student researcher(s) recognize the scope and limitation of the problem he/she has selected?	10	
Scientific Research	Has the problem been clearly stated? Have the student researcher(s) used scientific facts as a basis for new conclusions? Are the student researcher(s) aware of the basic scientific principles that lend support to the methods used and conclusions reached? Can the research be the basis for further study? Have the appropriate methods and scientific design been applied? Are the student researcher(s) aware of the empirical method (the necessity of repeating trials) and the importance of controlling the variables in order to reach valid conclusions?	25	
Collaboration	Is there evidence of collaboration present? Identify the portions of the project representing the work of others. Others include student researchers, teachers, specialists in the field of study, etc.	10	
Thoroughness/ Information	How successfully was the original plan carried through to completion? Were adaptations to the study made? If so, were they made in a way that upholds the integrity of the study? Are known facts and principles stated correctly and used accurately? Have the results of experiments been reported accurately even though faulty experimental methods or conditions may have made the data unreliable? If so, have these errors been noted? Did the student researcher(s) identify areas of weakness in the study?	25	
Results/ Conclusions	Have the student researcher(s) started with known facts and drawn their own conclusions? Are the conclusions consistent with the data and/or observations? Did the student researcher(s) share what was learned as a result of the research? Can student researcher(s) effectively communicate the results and impact of the study?	15	
Visual Display	Has the data been presented in the best manner for the particular type of information involved? Are spelling errors present? Does the exhibit demonstrate a general neatness and attractiveness? Is the display presented in a logical and interesting manner?	15	
TOTAL SCORE (100 POINTS POSSIBLE) This constitutes 50% of the overall score to determine final ranking			

**In the event of a tie, winner will be determined based on the score of the written report. If a tie still exists, the tie will be broken on scores received in the following sections in order: Knowledge Gained, Thoroughness/Information, Results/Conclusions.*

***If a team project only has one student present, they cannot rank higher than 2nd overall.*

Interview Rubric: Divisions 1-6 (Grades 7-12)

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 = _____
Scientific Research	The problem is clearly stated. The student researcher(s) use scientific facts as a basis for new conclusions. The student researcher(s) are aware of the basic scientific principles that lend support to the methods used and conclusions reached. 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) use some scientific facts as a basis for new conclusions. The student researcher(s) have limited knowledge of the basic scientific principles that lend support to the methods used and conclusions reached. With some modification, the research could be the basis for further study. Some of the appropriate methods and scientific design have been applied. The student researcher(s) are partially aware of the empirical method and the importance of controlling the variables in order to reach valid conclusions.	The problem is not stated. The student researcher(s) do not use scientific facts as a basis for new conclusions. The student researcher(s) are unaware of the basic scientific principles that lend support to the methods used and conclusions reached. 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 in order to reach valid conclusions.	25	_____ x 5 = _____
Collaboration	There is clear evidence of collaboration. The student researcher(s) identified portions of the project representing the work of others.	There is lack of clear evidence of collaboration or the student researcher(s) do not identify portions of the project representing the work of others.	There is lack of clear evidence of collaboration and the student researcher(s) do not identify portions of the project representing the work of others.	10	_____ x 2 = _____

Interview Rubric: Divisions 1-6 (Grades 7-12) continued

Area	High points 5-4 points	Medium points 3-2 points	Low points 1-0 points	Points Possible	Points Earned
Thoroughness/ Information	Student researcher(s) clearly communicate the original plan and adaptations that may have been made to the study. Any adaptations made uphold the integrity of 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 in the study are identified, if applicable.	Student researcher(s) partially communicate the original plan and adaptations that may have been made to the study. Any adaptations made may uphold the integrity of 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 in the study are identified, if applicable.	Student researcher(s) do not communicate the original plan and adaptations that may have been made to the study. Adaptations made do not uphold the integrity of 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 in the study are not identified.	25	_____ x 5 = _____
Results/ Conclusions	The student researcher(s) use known facts to draw conclusions. Conclusions are consistent with the data and/or observations presented. The student researcher(s) clearly share what was learned as a result of the research. The student researcher(s) effectively communicate the results and impact of the study.	The student researcher(s) use known facts to draw conclusions. Conclusions are inconsistent with the data and/or observations presented. The student researcher(s) ineffectively share what was learned as a result of the research. The student researcher(s) ineffectively communicate the results and impact of the study.	The student researcher(s) do not use known facts to draw conclusions. Conclusions are inconsistent with the data and/or observations presented. The student researcher(s) do not share what was learned as a result of the research. The student researcher(s) do not communicate the results and impact of the study.	15	_____ x 3 = _____
Visual Display	The data is presented in the best manner for the particular type of information involved. No spelling errors are present. The exhibit demonstrates general neatness and attractiveness. The display is presented in a logical and interesting manner.	The data is presented in a logical manner for the particular type of information involved. Some spelling errors are present. The exhibit lacks general neatness and attractiveness. The display is presented in a logical yet uninteresting manner.	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 lacks logic and appears uninteresting.	15	_____ x 3 = _____
TOTAL SCORE (100 POINTS POSSIBLE) This constitutes 50% of the overall score to determine final ranking					

**In the event of a tie, winner will be determined based on the score of the written report. If a tie still exists, the tie will be broken on scores received in the following sections in order: Knowledge Gained, Thoroughness/Information, Results/Conclusions.*

***If a team project only has one student present, they cannot rank higher than 2nd overall.*