



Agriscience Fair



Goals & Objectives

- The National FFA Agriscience Fair recognizes student researchers studying the application of agricultural scientific principles and emerging technologies in agricultural enterprises.
- The agriscience fair is for middle and high school students. Participation begins at the local level and progresses to state and national levels.



Developing a Project

- Developing a quality agriscience project includes and requires:
 - Focusing on an important agricultural issue, question or principle
 - Specific research objectives
 - Using a number of steps
 - Following a scientific process to collect and analyze data
 - Student commitment to a moderate or substantial amount of time
 - Teacher supervision



Project Process

- Getting Started
 - Pick a subject area
 - Narrow the scope
 - Consider your SAE
- Create a Hypothesis
 - Translate the problem into a question
- Test the Hypothesis
 - Research
 - Redefine problem
 - Revisit the hypothesis
 - Experiment
 - Form conclusion
 - Report results



Conducting Research; Presenting Findings

- Research
 - Primary research
 - Interviews
 - Exploratory experiments
 - Surveys
 - Secondary research
 - Books
 - Journals/newspapers
 - Internet
 - Peer reviewed articles
 - Reporting results
 - Charts
 - Graphs



Written Report

- Should include:

| Divisions 1-2 (Grades 7-8) | Divisions 3-6 (Grades 9-12) |
|--------------------------------|-----------------------------|
| Importance | Abstract |
| Other's Work | Introduction |
| Materials and Methods | Literature Review |
| Hypothesis/Anticipated Results | Materials and Methods |
| Results | Results |
| Discussion | Discussion and Conclusions |
| Conclusions | References |
| Summary | Acknowledgements |
| Acknowledgements | Skill Development |
| Skill Development | APA Style/Spelling |
| Spelling/Grammar | |



Categories

- **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



Categories

- **Environmental Services/Natural Resource Systems**

**This category will be combined. Depending on participation, they may be split in the future.*

- 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.
 - Examples:
 - Effect of agricultural chemicals on water quality
 - Effects of cropping practices on wildlife populations
 - Compare water movements through different soil types



Categories

- **Food Products and Processing Systems**: the study of product development, quality assurance, food safety, production, 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
 - Effects of the amount of sucrose used in baked goods
 - Use of a triangle test in sensory science



Categories

- **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



Categories

- **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



Categories

- **Social Science**: the study of agricultural areas including agricultural education, agribusiness, agricultural communication, agricultural leadership and sales in agriculture, food and natural resources.
 - Examples:
 - Investigate perceptions of community members toward 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 economic 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



Helpful Tips

- **Managing Outcomes**
 - Do not change your hypothesis
 - Do not omit evidence that is for our against your hypothesis
 - If the outcome is different than the hypothesis, suggest why
 - State what could/should happen next
- **Displaying your results**
 - Be creative and organized
 - Do not clutter
 - Use relevant photos and simple, correct captions (50 words or less)
- **Remember:**
 - Display is less than 10% of the total project score
 - Keep it simple
 - Posters are great for displaying information – see regulations in the handbook
 - Required written report templates available on FFA.org



Helpful Tips

- Interviewing tips
 - Practice
 - Prepare
 - Relax
 - Smile
 - Firm handshake
- Dress to impress



State Participation

- States may conduct a qualifying competition
- Six categories with six divisions each
 - 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 – team 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
 - Total of 36 different areas
- States may enter one project in each of the 36 areas if they conduct a state qualifying competition



National Participation

- No two entries from a state may compete with each other at the national level
- Students may only participate in one entry per year (as an individual or a team)
- Project display and interview at the National FFA Convention & Expo
- Individuals/teams may not compete in the same category and division once placing in the top 3 in that respective area



National Awards

- All participants receive recognition and a pin (gold, silver or bronze)
- Cash awards for 1st, 2nd and 3rd place will be dependent upon available funds.



Important Dates

- Forms due with postmark date no later than July 10
 - A complete submission includes the application and written report
- National FFA Convention & Expo, mid-October
- Please consult the program webpage and current year's orientation packet for more important details and deadlines



Questions?

Contact the Agriscience Fair
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