

# Agricultural Education and Youth Participation Task Force: Taking Tennessee to the Top



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January 31, 2020

The Honorable Bill Lee and Tennessee General Assembly  
State of Tennessee  
State Capitol Building  
Nashville, TN 37243

Dear Governor Lee and Members of the General Assembly:

The Agricultural Education and Youth Participation Task Force is proud to present you with this strategic plan for Tennessee's agriculture education and training system, over the next decade and beyond.

These recommendations were made after months of discussion and with broad input from teachers, industry professionals, students, and youth agriculture program leaders.

We believe that the recommendations contained in this report are in keeping with your challenge to develop a unique mission, vision, and strategic plan for the future of agricultural education and workforce development in Tennessee. Our proposed recommendations would align agricultural education with our changing industry needs, enable Tennessee to lead the nation in agricultural education, innovation and competitiveness, and enable students in all regions of Tennessee to realize the potential and opportunities that lie within the fields of agriculture and agriculture technology for a fulfilling and challenging career.

On behalf of the members of the task force and many others who contributed to this report and to the recommendations, thank you for this opportunity to serve. We are all willing to continue to work with you and be involved in seeing these recommendations through.

Sincerely,

A handwritten signature in blue ink, appearing to read 'DPerry', with a horizontal line underneath.

David Perry, Chair  
Agricultural Education and Youth Participation Task Force

# Executive Summary

The Agricultural Education and Youth Participation Task Force was established through statute by the Tennessee General Assembly and Governor Bill Lee in April 2019 because the governor and the general assembly recognize that, while Tennessee is one of the nation's leading agricultural states with an annual economic impact from agriculture of more than \$57 billion, national trends continue to show a decline in the number of young farmers and ranchers entering the agriculture workforce.

Tennessee's leaders recognize that our national security and economic security as a state and as a nation require a prosperous agricultural industry and a thriving workforce pipeline that reflects the value and opportunity for careers in agriculture. The message of how agriculture contributes to our strong economy through the production of safe, abundant, healthful, and affordable food and fiber products and the creation of job opportunities in new and exciting fields in agriculture must be shared.

The task force was charged with developing recommendations to build a robust model for agricultural education and youth participation with a focus on eight major areas:

1. The agricultural education mission in Tennessee;
2. Agricultural education structure and delivery in Tennessee;
3. The skills and credentials in demand in Tennessee's agricultural sector;
4. Emerging fields in agriculture and the training and knowledge required for advancement in those fields;
5. The impact of new technologies on agribusiness;
6. The impact of agricultural extracurricular participation on outcomes for youth;
7. Aligning the investment in science, technology, engineering, and math (STEM) education with the agricultural education mission; and
8. Integrating agricultural education and agricultural career readiness goals into the Tennessee Pathways initiative.

To fulfill its charge, the Agricultural Education and Youth Participation Task Force developed and approved the following recommendations that we believe will ensure an agricultural education and workforce system in Tennessee that will lead the nation.

The primary focus area recommendations of the task force were:

- Combine the expertise of the Tennessee Department of Agriculture (TDA) and the Tennessee Department of Education (TDOE) to work cooperatively to improve the agricultural education program and structure. This new partnership should be supported by:
  - A much-needed increase in staff support for agricultural education by creating positions in the TDA focused on the FFA and students' Supervised Agricultural

Experience (SAE) programs and the devotion of current staff in the TDOE primarily to curriculum development and teacher support.

- The execution of a Memorandum of Understanding (MOU) between the TDA and the TDOE stipulating the tenets of the new partnership and establishing a formal, cooperative working relationship between staff in each department.
- The establishment of a five-member, volunteer Agricultural Education Council to serve as a permanent advisory group for the agricultural education program and will monitor the partnership between the TDA and the TDOE.
- The growth and expansion of school-based agricultural education programs and FFA membership, from middle school through high school, to provide robust career and occupation opportunities within the agricultural industry.
- The establishment of an Agriculture Education Extended Day program, for the purpose of providing SAE and FFA services to agriculture education students, beyond the regular school day to increase employability skills of our students by supplementing local education agencies (LEA's) to pay any certified agriculture education teacher who provides these services one extra hour per day throughout the school year.
- The development of a state-wide policy to encourage local school superintendents to allow students involved in 4-H programs the ability to participate in 4-H activities as an extra-curricular school activity during the school day, for up to 10 days, without being counted absent.
- Establishment of extension specialist staff positions will provide technical, pedagogical, and curriculum supports for Tennessee 4-H agents.
- An on going review of emerging fields and new technologies in agriculture and the development of recommendations will prepare students for higher education and lifelong success in Tennessee's agriculture sector.
- An increased in staff support for agricultural education by creating positions within UT Extension will support county, regional, and state level 4-H work.
- Identification and acknowledgment of agricultural education as a key component of the STEM movement within the TDOE.
- Creation of new public/private partnerships that can successfully convene educational leaders and industry experts around a shared vision of high quality rural economic opportunity and develop new cutting-edge ag-tech degree programs that will train rural students for 21st-century agriculture jobs.



# List of Task Force Members

David Perry - President, CEO, and Director, Indigo Ag Inc.; Task Force Chair
Charles Hatcher - Commissioner of Agriculture
Penny Schwinn - Commissioner of Education
Austin Parker - Tennessee 4-H member
Chelsea Rose - FFA Program Volunteer and Homemaker, Tennessee FFA Foundation
Ann Johnson - Agricultural Education Teacher, Munford High School
Arvazena Clardy - Extension Associate Professor of Horticulture and Extension Specialist, Tennessee State University
Stephen Milligan - President, Tennessee College of Applied Technology - Crump
Justin Crowe - Extension Specialist, 4-H Youth Development, UT Extension
Representative Curtis Halford - Chair – House Agriculture and Natural Resources Committee
Senator Steve Southerland - Chair – Senate Energy, Agriculture, and Natural Resources Committee

## Proposed Recommendations for Implementation

The following 18 action items are recommended for immediate implementation by the Agriculture Education and Youth Participation Task Force to provide a new direction and offer equal opportunities for all students to pursue education and careers in agriculture in Tennessee. While some action items can be implemented immediately, others may take a couple of years (short-term accomplishments), and others will depend on the success of both the immediate and short-term accomplishments (long-term accomplishments). These accomplishments are listed in order by the focus area.

### Recommendation Focus Area

#### One: The agricultural education mission in Tennessee

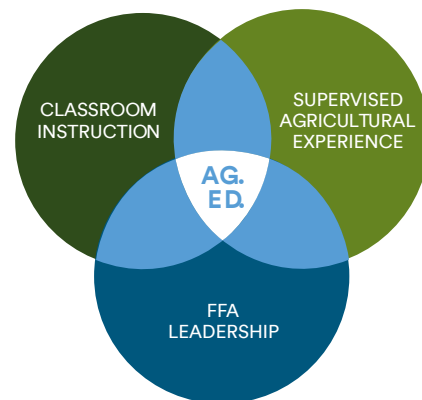
**Action Item 1.1:** Recommend strengthening the agricultural education mission in Tennessee by formally recognizing school-based agricultural education as follows:

Tennessee agricultural education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems. The complete three-component model for school-based agricultural education includes classroom/laboratory learning, supervised agricultural experience (SAE) projects, and participation in the Future Farmers of America (FFA).

**These three-components include:**

- Classroom or Laboratory Instruction – Contextual learning through classroom, greenhouse, shop, and or school farm.

- Supervised Agricultural Experience - SAE (Experiential Work-Based Learning) – Categorized as Placement/Internship, Ownership/Entrepreneurship, Research, School-Based Enterprise, and Service Learning.
- FFA (Leadership Education) - Opportunities provided by the Tennessee FFA Association and National FFA Organization.



### Recommendation Focus Area

#### Two: Agricultural education structure and delivery in Tennessee

Agricultural education structure and delivery in Tennessee should rely on the expertise of the TDOE for curriculum development, classroom/laboratory resources, teacher mentoring, and continuation of the integral relationship between the classroom and the FFA chapters, as provided for in the Federal Charter.

Public Law 116-7, which grants a Federal Charter for FFA, was passed by Congress in 1950 and revised several times, most recently in 2019. The law calls for an interagency working agreement between the U.S. Department of Education and the U.S. Department of Agriculture focused on strengthening



FFA and school-based agricultural education. The TDA would provide new opportunities for students to develop Supervised Agricultural Experience (SAE) programs. The FFA will build on the industry expertise of the TDA in pursuing the FFA Mission.

**Action Item 2.1: Create a partnership between the TDA and TDOE, Immediate Need**

The TDA and TDOE should combine expertise to work cooperatively to improve the agricultural education program and structure. This partnership could position Tennessee to provide a best-in-the-nation program for students.

The TDOE should continue to be the primary source for curriculum development, classroom and laboratory resources, teacher mentoring, and the continuation of the integral relationship between the classroom and the FFA program with support from the TDOE, as provided for in the Federal Charter.

The TDA would provide new opportunities for students to develop Supervised Agriculture Experience Programs. Students will more readily transition into existing department of production agriculture programs upon graduation. The FFA program will build on the industry expertise of the TDA in pursuing the FFA mission.



**Action Item 2.2: Increasing staff support for Agricultural Education, Immediate Need**

New staff in the TDA should include an FFA Executive Secretary to serve as the state leader for the FFA program and staff. Other staff members in the TDA should be focused regionally on the FFA program and the Supervised Agricultural Experience programs with two staff per region, for a total of six regional staff.

Staff in the TDOE should include a Program Manager for Agriculture, Food and Natural Resources (AFNR) who will focus on curriculum development. An Agricultural Education Program Quality team should be established to support agricultural education in three areas: (Note: This recommendation is explained further in the supplemental information provided.)

- Teacher support, retention, recruitment, and accountability
- Classroom/Laboratory Resource Development
- Initiation of agricultural education programs in middle and high schools

The program quality team should be led by a State Agricultural Education Program Quality Specialist stationed in the TDOE who will lead three regional Program Quality Specialists (East, Middle, West) located across the state.

**Action Item 2.3: Establish an Agricultural Education Council, Immediate Need**

- This council should serve as an advisory group for the agricultural education program and monitor the partnership between the TDA and TDOE.
- The group should meet at least annually to evaluate the status of agricultural education by hearing from the program staff in each department, as well as teachers, industry stakeholders, and others as needed.
- The group should publish an annual report highlighting program successes and deficiencies to be considered by the TDA and TDOE.
- The council should be supported jointly by the FFA Executive Secretary and the Agricultural Education State Program Quality Specialist.
- Agricultural Education Council Members:
  - Two representatives from the Tennessee Association of Agricultural Educators; one educator with fewer than 10 years' experience, and one educator with more than 10 years' experience
  - One representative from the Tennessee FFA Foundation
  - One representative from the Tennessee FFA Alumni
  - The Tennessee FFA Association State President (student)

**Action Item 2.4: Develop a Memorandum of Understanding to Strengthen the Partnership, Immediate Need**

A new Memorandum of Understanding between the TDA and TDOE should outline the new partnership, based on the following tenants:

- Each department will remain dedicated to delivering the full model of agricultural education, which includes: classroom/laboratory instruction, FFA leadership program, and Supervised Agricultural Experience projects and programs.
- Each department will comply with federal requirements for Carl D. Perkins Act funding which is the principal source of federal funding for secondary and postsecondary career and technical education programs. The TDOE should continue its role in securing this important funding.
- Each department will encourage an open line of communication between TDA program staff and TDOE program staff.
- The departments shall recognize the Agricultural Education Council as its primary advisory source, review the Council's annual report, and give consideration to each recommendation offered by the Council.

- TDA staff should be empowered to interact with local teachers, students, schools, and school systems as part of the delivery of the complete agricultural education model which includes activities such as conventions, conferences and competitions.

**Action Item 2.5:** Recommend that every student enrolled in a school-based agricultural education program with a charter FFA chapter in the state of Tennessee be a member of the FFA and resources for that effort be sought through a private partnership with the Tennessee FFA Foundation to establish Tennessee as an affiliation FFA member state.

**Action Item 2.6:** Establish an Agricultural Education Extended Day for the purpose of providing Supervised Agricultural Experience (SAE) and FFA services to agriculture education students beyond the regular school day. Funds should be allocated to supplement local education agencies (LEAs) to pay any certified agriculture education teacher who holds a valid teaching license in agriculture education or provisional certificate in agriculture education for one extra hour per day not to exceed 180 hours per school year. (This recommendation is explained further in the supplemental information provided.)

- SAE Services: Extended Day pay shall be provided to any certified agricultural education teacher who works beyond the regular workday to provide instructional services and oversee/supervise agricultural experience programs that include entrepreneurial, placement, agriscience and research projects.
- FFA Services: Extended Day pay shall be provided for any certified agricultural education teacher who works beyond the regular workday to provide leadership and career development opportunities through the National FFA Organization.

(Note: This recommendation is explained further in the supplemental information provided.)

**Action Item 2.7:** Increase the exposure to agricultural awareness at the middle school level.

- Establish a communication strategy on the career, academic, and engagement importance of students participating in agricultural education programs and activities at the middle school level.
- Include agricultural education as a focus area of future CTE Start-Up or other middle school grant funding opportunities with an emphasis on distressed and at-risk counties.
- Revise middle school course standards and include middle school grade level content on agricultural careers and occupations.
- Generate ideas to incentivize Local Education Agencies (LEAs) to offer additional middle school CTE and agriculture programs.

- o Expand access to the Basic Education Program (BEP) funding for middle school CTE and agriculture courses.
- o Extended day contracts should be made available to agriculture middle school teachers.

(Note: This recommendation is explained further in the supplemental information provided.)

**Action Item 2.8:** Establish three full-time UT extension specialist positions to provide technical and pedagogical knowledge and skills in agricultural engineering and applied technologies support to create curricula supports and deliver professional development for Tennessee 4-H agents. (Note: This recommendation is explained further in the supplemental information provided.)



## Recommendation Focus Area Three: The skills and credentials in demand in Tennessee's agricultural sector

Identifying the skills and credentials in demand in Tennessee's current and future agricultural sector will be economically critical to enhancing the lives of Tennesseans. Development of Tennessee's agriculture workforce will help engage farmers and agricultural-related occupations in both rural and urban areas.

**Action Item 3.1:** Develop a comprehensive labor needs assessment including direct and indirect occupational codes within the agriculture, food, and natural resources sector in collaboration with industry and labor to identify the occupational codes, skills, and credentials to meet future needs.

**Action Item 3.2:** The task force believes that the current certification process to approve industry certification for agriculture students is grossly insufficient to meet the needs of either the students or industry and the TDOE needs to relook at that certification process, and until that re-evaluation happens, it is recommended for the TDA to work closely with the TDOE to determine what those certifications are for Agricultural Education.



## **FFA MISSION**

Learning to Do, Doing to Learn  
Earning to Live, Living to Serve



## Recommendation Focus Area

### Four: Emerging fields in agriculture and the training and knowledge required for advancement in those fields

Agriculture is one of the largest industries in the world and is being impacted by emerging fields and new technologies. This disruption increases the need for adoption, scope, and depth of new technologies that include a reimagining of the entire agribusiness system, and for students who are interested in agriculture technology careers, we must train them with the skills needed for these 21st-century jobs.

Much is being done. For example, a public/private partnership of industry experts and leaders from the Tennessee Board of Regents; Tennessee Higher Education Commission; TDA; TDOE; Tennessee Department of Labor & Workforce Development; and Tennessee Department of Economic & Community Development convened around a shared vision of rural economic opportunity to develop a new cutting-edge 2-year advanced agriculture tech degree program that will train rural students for 21st-century agriculture jobs.

This new Digital Agronomy Program at Tennessee College of Applied Technology Covington and Motlow State Community College, as well as the new Farming Operations Technology at Tennessee College of Applied Technology Crump, will provide students with a foundation in both conventional and regenerative agricultural practices with a focus on 21st-century technology. Students will be exposed to GIS mapping, precision agriculture, agriculture equipment, drone piloting, robotics, the internet of things, irrigation practices, and the latest in soil, plant, and crop management.

The development of new programs at the Tennessee Colleges of Applied Technology will produce a new pipeline of talent that will help establish an entire new group of agricultural technologists to manage operations in a new developing agricultural technology ecosystem in west Tennessee and the United States.

**Action Item 4.1:** Create a study committee including, but not limited to, the Tennessee Board of Regents; Tennessee Higher Education Commission; TDA; TDOE; Tennessee Department of Labor & Workforce Development; Tennessee Department of Economic & Community Development; leaders of the agriculture business community; agricultural education teachers; and the Tennessee FFA Foundation to identify emerging knowledge and skills in agriculture in order to develop relevant agricultural education training at the elementary, secondary, and postsecondary levels, and:

- Shift paradigm of agriculture careers to attract a stronger and more diverse pipeline of talent.
- Build relevant, employable skills that will advance the agriculture industry through technology and new practices.

- Offer opportunities for students to remain in Tennessee to pursue education and careers in the agriculture, food, and natural resources sector.

## Recommendation Focus Area

### Five: The impact of new technologies on agribusiness

Governor Lee has charged all departments of state government to find new ways to serve our rural communities. This new digital agronomy program outlined in Focus Area 4 is one way to bring 21st-century workforce development and high-quality job opportunities to rural Tennessee, including several distressed and at-risk counties. The new Digital Agronomy Program directly supports the goals of growing the number of agricultural industry certifications and improving coordination for ag-business recruitment, at both the K-12 and postsecondary levels.

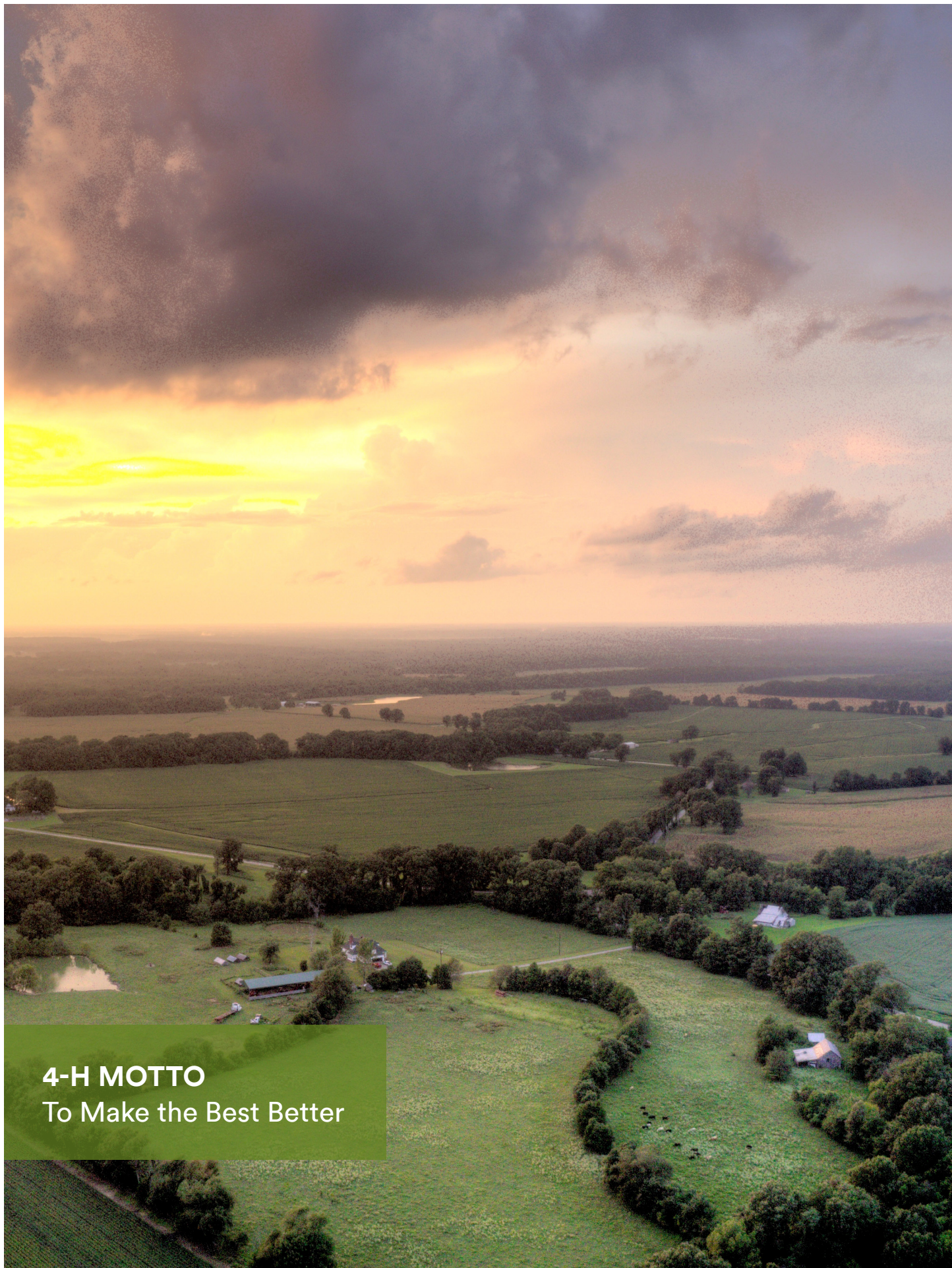
**Action Item 5.1:** The same study committee created for Focus Area Four will study the impact of current programs and expand public-private partnerships, and will encourage the teaching of a holistic set of skills, including career awareness in grades K to postsecondary, to include the following subject areas:

- Agricultural Technology - cutting-edge farming technology that advances the industry
- Agriculture Innovation - natural agriculture sciences and the latest farming practices
- Business and Management - business operations in the agriculture industry
- Social Science - agricultural society and relationships between stakeholders

This study committee will be coordinated by the governor's office, with support from the TDA, and will update the Commissioners of the Tennessee Department of Economic & Community Development, TDOE, and Tennessee Department of Labor & Workforce Development biannually.







**4-H MOTTO**  
To Make the Best Better



## Recommendations Focus

### Area Six: The impact of agricultural extracurricular participation on outcomes for youth

The impact of agricultural extracurricular participation on outcomes for youth is a vital part of their academic, skill, and career development toward becoming a productive citizen.

**Action Item 6.1:** Recommend that the Tennessee State Board of Education acknowledge 4-H activities as in-school activities as related to the Tennessee State Board of Education Attendance Policy.

**Action Item 6.2:** Recommend supporting the rural and distressed Tennessee counties that have only two University of Tennessee extension agents by adding a third extension agent to ensure a full-time 4-H agent to support 4-H programs activities.



## Recommendations Focus Area

### Seven: Aligning the investment in science, technology, engineering, and math (STEM) education with the agricultural education mission

**Action Item 7.1:** Recommend that TDOE re-establish the Horse Science, Hydroponic/Aquaculture, and Floral Design (with Fine Arts credit) courses to align and meet industry trends.

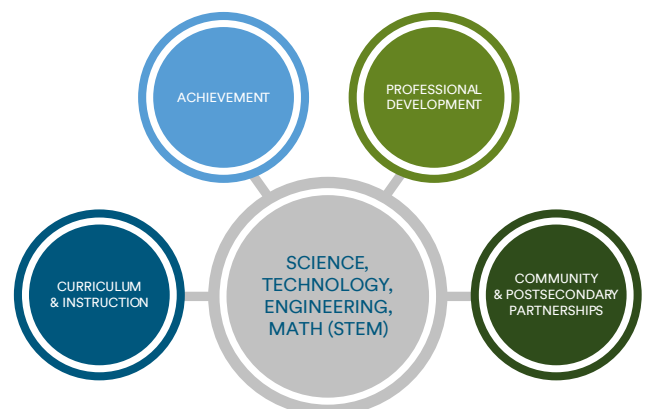
**Action Item 7.2:** Recommend that the Agricultural Education Council continue the dialog and monitor the progress of the STEM evaluation process on the following items which will be included in the council's annual report.

- Establish a communication strategy to inform agriculture, food, and natural resources (AFNR) programs on opportunities to be involved with the STEM designation program.
- Develop an official partnership with the Tennessee STEM Innovation Network (TSIN) and encourage an agricultural industry representative position to be added to the Tennessee STEM Innovation Network Executive Council.
- Identify STEM courses within the AFNR Pathways and highlight how STEM is imbedded in agricultural education. (See supplemental information.)
- Promote the expansion of the STEM-related activities in instructional and competitive events provided through the FFA and 4-H events in grades 4-postsecondary. (See supplemental information.)



“Students participating in school-sponsored events shall be counted present”

TN SCHOOL BOARD POLICY 4.100.3



## Recommendation Focus Area

### Eight: Integrating agricultural education and agricultural career readiness goals into the Tennessee Pathways initiative

**Action Item 8.1:** Expand the Tennessee Pathways opportunity to allow all agriculture, food, and natural resources systems programs the opportunity to be eligible to participate.

- Expand Tennessee Pathways and develop specific agriculture, food, and natural resources Pathway opportunities.
- Enhance the TN Pathway labor market requirements to include the top agriculture labor market needs/trends.
- Ask the Tennessee Department of Labor and Workforce Development to develop aggregated data for the agricultural sector industry tab to be added to their reporting systems.
- Stimulate rural agricultural pathways that include innovative startup companies that lead to an increase in agricultural jobs.



## Shared Values

Creating and implementing shared values is essential to provide guidance in regenerating the trajectory of agricultural education opportunities in Tennessee. These shared values adopted by the task force will help provide guidance with the implementation of the long-term accomplishments.

The TDA and TDOE should combine expertise to work cooperatively to improve the agricultural education program and structure.

## Acknowledgments

The Agricultural Education and Youth Participation Task Force wish to acknowledge and thank the following individuals and organizations for their contributions and support:

**Logan Hess** - Governor Bill Lee's Staff

**Steve Playl, Jr.** - Senior Director, College and Career Experiences, State Director of Career and Technical Education, Tennessee Department of Education

**Steven Gass** - Program Manager Agriculture, Food, and Natural Resource, Tennessee Department of Education

**Christopher Goode** - Indigo Ag, Inc.

## Supplemental Information

### Action Item 2.2 Proposed Position Descriptions

#### Program Manager, AFNR (TDOE)

- Job description would remain the same, with an added 20% responsibility for FFA

#### Agricultural Education State Program Quality Specialist (TDOE)

- Responsibilities
  - Direct the Regional Program Quality Staff and their program visits and assessment.
  - Lead an advisory council of agriculture educators, the Program Manager for AFNR, FFA Executive Secretary, and industry representatives to set program quality standards.
  - Develop an assessment for tracking program quality that includes the advisory council-developed program quality standards.
  - Visit agricultural education programs to share resources with local educators and administrators and to check program quality.
  - Communicate with school districts and systems to initiate new agricultural education programs in middle and high schools.
  - Develop strategies for teacher recruitment, retention, support, and accountability.
  - Work in partnership with the Program Manager for AFNR and the FFA Executive Secretary to ensure a complete model for agricultural education.
  - With 20% focus on FFA support and involvement through participation and attendance in events, teacher support, and other functions as necessary.

### Administrative Assistant to the State Program Quality Specialist (TDOE)

- Reports to the State Program Quality Specialist
- Responsibilities
  - Regular office work including phone and email correspondence.
  - Communicate with agriculture educators, FFA staff and local school administrators, as directed by the Program Quality Specialist.
  - Arrange and organize stakeholder meetings, conference calls, etc.
  - Keep reports and organize data from program quality assessments.
  - Maintain contact with the agricultural educators in Tennessee to share program quality-related resources and information.
  - Develop and maintain a teacher directory.

### Regional Program Quality Staff (three staff with one per Grand Division) (TDOE)

- Reports to the State Program Quality Specialist
- Responsibilities
  - Assist with the development of an advisory council of agricultural educators, the Program Manager for AFNR, FFA Executive Secretary, and industry representatives to set program quality standards.
  - Utilize an assessment for tracking program quality that includes the advisory council-developed program quality standards.
  - Visit agricultural education programs to share resources with local educators and administrators and to check program quality.
  - Develop reports on program performance and areas for improvement.
  - Document and share best practices.
  - Responsible for teacher extended day pay reporting (if adopted)
  - With 20% focus on FFA support and involvement through participation and attendance in events, teacher support, and other functions as necessary.

### FFA Executive Secretary (TDA)

- Responsibilities
  - Provide leadership for the FFA program
  - Manage the regional FFA staff
  - Mentor and lead the FFA State Officer Team
  - Coordinate with Camp Clements staff to maximize camp offerings

- Oversee the Camp Clements lease and contracts
- Improve camp offerings through curriculum revision and strategic planning
- Organize and coordinate meetings and the business of Team Ag Ed
- Work in partnership with the TDOE's Program Manager for AFNR and Program Quality Specialist to ensure a complete model for agricultural education

### Administrative Assistant to the FFA Executive Secretary (TDA)

- Reports to the FFA Executive Secretary
- Responsibilities
  - Regular office work including phone and email correspondence
  - Communicate with industry representatives and agricultural educators/FFA advisors, as directed
  - Arrange and organize stakeholder meetings, conference calls, etc
  - Maintain contact with the Regional Staff
  - Assist with the development and distribution of regular, state newsletters/emails
  - Assist with special events registration and coordination

### Regional Staff (six staff with two in each Grand Division) (TDA)

- Reports to the FFA Executive Secretary
- Responsibilities
  - Administer and coordinate FFA events above the chapter level
  - Mentor and lead the FFA Regional Officer Teams (East, Middle, West)
  - Plan and coordinate major FFA events, including State Convention, National Convention state involvement and events, FFA Camp, etc.
  - Plan and coordinate district, sectional, and regional Career and Leadership Development Events
  - Offer resources for FFA Advisors to utilize locally to enhance Supervised Agricultural Experiences and Career and Leadership Development Events training
  - Develop conferences and training for students and advisors that contribute to quality FFA programs
  - Visit FFA chapters regularly to share resources with advisors and to improve program quality
  - Develop strategies for growing FFA membership and coordinate the roster process between the National FFA Organization and local chapters



#### Action Item 2.6: Extended Day Local LEA Stipulations:

- Extended Day pay is work to be performed in addition to the regular school day to high school teachers in state-approved Agriculture Education program areas offered in grades 9-12.
- Pay should be based on the minimum hourly rate on the state approved 180-day base salary for the teacher's years of experience.
- Teachers who deliver Extended Day instructional and leadership development activities shall receive a planning period during the regular school day.
- Teachers who deliver Extended Day instructional and leadership development activities are to teach no more than one class period out of the agriculture education subject area.
- Local LEA must offer Extended Contracts in the form of 11 or 12 month programs in order to be eligible for Extended Day Funds.

#### Action Item 2.6: Extended Day Teacher Requirements:

- Teachers must participate in the Extended Day Accountability Process.
- Maintain with the Regional Agriculture Program Quality Specialist within the TDOE, a schedule of approved extended day activities.
- Submit a monthly report of daily activities conducted along with attendance records of participating students
- Teachers receiving Agriculture Education Extended Day pay shall meet the program requirements listed in the Tennessee Agriculture Education Teacher Performance Levels
  - Teachers who meet the Qualified or Exemplary Levels will be eligible for Extended Day funds.
  - Teachers who fall in the Probationary Level will be given one academic school year or grace period to make the necessary improvements to their performance in order to maintain participation in the Extended Day Program and are subject to multiple visits from the Regional Agriculture Education Program Quality Specialist.
  - Teachers who are within their first three years of service or teachers who transfer schools that fall within the Probationary Level will be given three academic school years or grace period to make the necessary improvements to their performance in order to maintain participation in the Extended Day Program and are subject to multiple visits from the Regional Agriculture Education Program Quality Specialists.
- Teachers who are removed from the Extended Day Program due to lack of performance must complete the following conditions in order to participate in the program
  - Submit an application to the TDOE Agriculture Education Program Quality Specialist.

- Maintain the Qualified Level of Performance for three consecutive years in the Tennessee Agriculture Education Teacher Performance Levels.
- Submit a detailed schedule of activities to the Regional Agriculture Education Program Quality Specialist.
- Undergo an evaluation with the Regional Agriculture Education Program Quality Specialist, the State Agriculture Education Program Quality Specialist and the school principal.



# Tennessee Agriculture Education Teacher Performance Levels

Answers will reflect the individual teacher, in regards to their performance and not the program as a whole.

Tier 1 (1pt.)	Tier 2 (2pts.)	Tier 3 (3pts.)
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## SAE

Participation in Student Recognition Judging: Proficiencies, Stars State Degrees.

Regional	State	Nationals
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Fair and Show Participation: Hosting Show, Assisting with Skillathons, Assisting Student Projects, Checking in at Fairs

1 day	2-3 days	5 or more days
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External SAE Opportunities:

Job Shadowing	School Based Enterprises	WBL/internships
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Student Applications: Agriscience Fair, Proficiencies, STARS

1 application	2-3 applications	5 + applications
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Career Connections: Industry, Colleges and Institutions, Officers, Other

Local Speakers	State Speakers	National Speakers
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Community Service Projects: (with students)

1 day	2-4 days	5 or more days
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Cooperative Activities: YF&R, Ag groups, 4-H, etc.

Local	State	National
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## FFA

CDE/LDE Participation: (per school year)

2 CDE/LDEs	3-5 CDE/LDEs	6 + CDE/LDEs
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Agriculture Education Trips with Students: Chapter Exchange, Farm Machinery Show, NAILE, FFA Camp, WLC, goFFA, Officer retreat, Forestry Camp, Other

5 days	6-9 days	10 or more days
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Banquets and Conferences:

Chapter or Regional Banquet	State Convention	National Convention
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Officer Positions Held

Chapter Officer Team	Regional Officer	State/National Officer
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Highest Degrees Awarded in Chapter

Discovery Greenhand/Chapter	State	American
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PLow: Passing Literacy OnWard

State Bronze	State Silver	State Gold/Platinum
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Student Leadership Training:

Greenhand Conference/COLT	Goodwill Tour, TLC, Varsity Visit, President's Conference, 212/360	State Gold Platinum
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Program Documentation:

POA (Program of Activities)	National Chapter Award	National 1,2,3 Star Award
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Advisory Boards:

Chapter Advisory Council	Active Alumni Chapter	Alumni attends State/National
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## Classroom Instruction

Agriculture Professional Development: ex: TAAE Conference, NAAE Convention, CTE Institute, CASE, Mid Winter Conference, anything Ag Related, University or Extension Sponsored

3 days	4-6 days	7 or more days
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Conducting Professional Development

Local	State	National
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Teacher Mentoring

School	Region	Student Teacher
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EPSO's Earned: Industry certifications, Dual Credit, OSHA 10, OSHA ag 10

1 Student	2 Students	3 Students
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Professional Organizations Joined (teaching or professional agriculture)

1 organization (list)	2 organizations (list)	3 organizations (list)
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School Leadership:

School Committee	Lead Teacher	CTE Director
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Presentations with Students: Farm Bureau, Kiwanas, Elks, Chamber of Commerce, etc

1 presentation	2-4 presentations	5 or more presentations
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Facilities:

Classroom Improvements	Facility Improvement	Grant Obtainment
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Student Success Updated: (Any or All Areas of Three Circle Model)

Digital Media: Webpages, Social Media

5-9 updates a year	10-14 updates a year	15 + updates a year
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Newsprint, TV, radio

2 articles, interviews, etc	3-5 articles, interviews, etc	6 or more articles, interviews, etc
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Probationary: 20-30 points

Acceptable for years 1-3 that include New Teachers or Teachers that Transfer Schools

Qualified: 31-49 points

Exemplary: 50 points minimum

#### Action Item 2.7: Middle School Program Structure:

- Ag Ed Program Quality Specialist will provide support to local LEA and individual teachers when establishing and maintaining middle school agriculture education programs.
- It is recommended that middle school agriculture consist of at least nine weeks of study in the seventh grades or approximately 45 hours. The technologists program should be one year (180 hours) in length, but a minimum of one semester (90 hours). It is understood that local situations vary and these minimum recommended times may not be practical in all schools. The program lengths listed are suggestions.
- In order to grow the programs and sustain the educational opportunities it will be necessary to modify the BEP funding for middle schools to include the CTE Multiplier in order to generate funds for supplies and labs to be used solely in the Agriculture Program where the funds were generated.
- The Middle School Food and Agriculture Literacy Curriculum developed by the National FFA Organization should be incorporated to expand the current TDOE curriculum from only one course currently offered for grades 7th and 8th grade.
- Middle School FFA chapters shall be affiliate chapters.
- Middle School students should be encouraged to participate in the Agriscience Fair as an extension of the STEM curriculum and Supervised Agriculture Experience (SAE) development.
- Career Development Events (CDE) and Leadership Development Events (LDE) will be broadened to recognize a division of middle school chapter awards.

#### Action Item 2.8: Proposed Position Descriptions

##### UT Extension Pedagogical Specialist: Youth Educator Professional Development

- Responsibilities
  - Coordinate, provide, and assess 4-H agent professional development.
  - Train TSU and UT 4-H agents with assistance from the Technical Extension Specialist and Youth Curriculum Extension Specialist on use of curricular materials.
  - Provide pedagogical knowledge and skills assistance to TSU and UT 4-H agents.
  - Seek funding to provide extramural support for TSU and UT 4-H agent professional development.

##### UT Extension Pedagogical Specialist: Youth Curriculum

- Responsibilities
  - Develop and maintain an online repository of curricular materials for 4-H Youth Development.
  - Provide curriculum assistance to TSU and UT4-H agents.
  - Develop 4-H curricular materials with assistance from the Extension Technical Specialist and Youth Educator Professional Development Extension Specialist.
  - Train TSU and UT 4-H agents with assistance from the Technical Extension Specialist and Youth Educator Professional Development Extension Specialist on use of curricular materials.
  - Provide pedagogical knowledge and skills assistance to TSU and UT 4-H agents.
  - Coordinate and seek funding to provide extramural support for 4-H Youth Development curriculum.

##### UT Extension Technical Specialist: Agricultural Engineering and Applied Technologies

- Responsibilities
  - Provide technical knowledge and skills assistance to TSU and UT 4-H agents.
  - Assist the Extension Pedagogical Specialists with providing professional development to TSU and UT 4-H agents.
  - Develop 4-H curricular materials for TSU and UT 4-H agents with assistance from Extension Pedagogical Specialists.
  - Assist the Extension Pedagogical Specialists with training TSU and UT 4-H agents on use of curricular materials.



## Action Item 7.2: STEM Aligned Agriculture, Food, and Natural Resources Courses

- Advance Food Science
- Agricultural and Biosystems Engineering
- Agricultural Power and Equipment
- Agriscience\*
- Applied Environmental Science\*
- Food Science and Safety
- Greenhouse Management
- Landscaping and Turf Science
- Large Animal Science
- Natural Resources Management
- Plant and Soil Science
- Principles of Agricultural Mechanics
- Principles of Plant Science and Hydroculture
- Veterinary Science\*

\*Counts as a lab science credit required for graduation

## Action Item 7.2: STEM Focused FFA Activities and Career Development Events (CDEs)

### Agriscience Fair

The National FFA Agriscience Fair recognizes student researchers studying the application of agricultural scientific principles and emerging technologies in agricultural enterprises to include

- Animal Systems
- Environmental Systems/Natural Resources
- Food Products and Processing Systems
- Plant Systems
- Power, Structural and Technical Systems
- Social Systems

### Agricultural Mechanical and Technical Systems CDE

The National FFA Agricultural Technology and Mechanical Systems Career Development Event (CDE) has strong technical content and is complemented by the development of practical, hands-on skills. The subject matter areas and skill development practices have been grouped into five system areas, so named because of the complex interaction and synergistic process common to agriculture to include environmental and natural resources systems, technology, and agricultural machinery and equipment.

### \*Agronomy CDE

The purpose of the National FFA Agronomy Career Development Event (CDE) is to create interest and promote understanding in agronomy by providing opportunities for recognition through the

demonstration of skills and proficiencies. It also gives students an opportunity to explore career opportunities available in agronomy and encourage students to pursue careers in agronomy.

### \*Agricultural Communications CDE

The purpose of the National FFA Agricultural Communications Career Development Event (CDE) is to excite and inspire students to develop basic skills relevant to agricultural communications. Students will be equipped with strong communication skills and will have developed the ability to work collaboratively to effectively communicate and advocate for agriculture.

### \*Dairy Cattle Evaluation and Management CDE

The Dairy Cattle Evaluation and Management Career Development Event (CDE) helps teams of our four students develop skills in observation, analysis, communication and team communication through this competitive CDE. Each participant contributes to the team's total score through both team and individual activities. For the team exercise, judges provide a dairy farm management scenario with problems and solutions that must be identified as if they were a hired consultant advising a dairy producer. As individuals, team members complete a general knowledge exam, evaluate and select six dairy animal classes, and provide oral reasons.

### \*Environmental and Natural Resources CDE

The Environmental and Natural Resources Career Development Event (CDE) provides competing students with an opportunity to Interpret data, use measuring devices in the field and work through real-life scenarios involving environmental threats. Each team consisting of four FFA members competes in all types of weather conditions – just like professionals working in the environmental and natural resource industry – in pursuit of recognition for demonstrating skills relevant to GPS navigation, soil science, water management and wildlife conservation. The competitors produce written statements and an oral presentation and must exhibit competency via writing and identification activities.

### Farm and Agribusiness Management CDE

The Farm and Agribusiness Management Career Development Event (CDE) helps students learn business skills and apply economic principles to agricultural businesses. By competing, participants demonstrate their ability to analyze agricultural business management information, apply economic principles and concepts of business management, evaluate business management decisions, and work together cooperatively as a team.

### Floriculture CDE

The Floriculture Career Development Event (CDE) requires students to identify plants, judge flower arrangements and solve problems. Participants also demonstrate skills in flower arranging, propagation and the preparation of floral and foliage

products for sale. This four-person team event is designed to create an interest in career preparation for all current and future aspects of the floriculture industry through leadership development and hands-on technical skill development using industry standards that are delivered through the agricultural education curriculum. Teams are judged on their ability to perform an assignment similar to one routinely performed in the floriculture industry. Additionally, individual members are called up to contribute to the team's effort by completing events such as a general floriculture examination and identification of plant materials and equipment, a problem-solving exercise, a practicum, a job interview and a floral arrangement.

### Food Science and Technology CDE

The Food Science and Technology Career Development Event (CDE) requires students to have an in-depth understanding of food product development, food presentation and food safety issues. Participants also use their sensory skills to solve problems and make sound decisions. Students in this event participate in both team and individual activities. As a team, students respond to a product development scenario describing the need for a new or redesigned product that appeals to a potential market segment. The team's task is to design a new food product or reformulate an existing product based on information contained within the product development scenario. The team also completed a food safety and sanitation activity. As individuals, an objective test, a problem-solving practicum, and a food safety practicum are completed to count towards the team score.

### Forestry CDE

The Forestry Career Development Event (CDE) requires students to demonstrate their skills in diagnosing forest disorders, managing forests and forest inventory and applying approved silviculture practices. The team portion of the event calls on students to respond to a forest industry scenario with problem-solving using forestry skills and tools. The team also provides a presentation about a national or regional forestry issue. Team members contribute individually by completing a general forestry knowledge exam, rounds of tree identification and measurement, and individual practicums.

### \*Livestock Evaluation CDE

The Livestock Evaluation Career Development Event (CDE), students work within teams to rank breeding and market classes of beef, sheep, and swine and give oral reasons to back up their decisions. Students participating in this CDE make accurate and logical observations of livestock, decide on the desirable traits in marketing and breeding livestock, and select and market livestock that will satisfy consumer demands and provide increased economic returns to producers.

### Meats Evaluation and Technology CDE

The Meats Evaluation and Technology Career Development Event (CDE) delves into the science of meat. During this team event, students evaluate beef carcasses for quality and yield

grade; identify various meat cuts and place carcasses, and identify wholesale and/or retail cuts. Students are challenged to develop analytical skills, critical-thinking strategies and effective communication skills.

### \*Milk Quality and Products CDE

The Milk Quality and Products Career Development Event (CDE) demonstrate their knowledge about the quality production, processing, distribution, promotion and marketing of milk and dairy foods.

### Nursery/Landscape CDE

The Nursery/Landscape Career Development Event (CDE) tests student's skills in maintaining landscape plants and related products, evaluating equipment and services, and performing landscape design.

### Veterinary Science CDE

The Veterinary Science Career Development Event (CDE), students working in teams demonstrate their technical competency with small and large animals by completing a written exam, critical-thinking scenario questions, identifications, and hands-on practicums.

## Action Item 7.2: 4-H STEM Activities and Curriculum

### Agriscience Fair

The National FFA Agriscience Fair recognizes student researchers studying the application of agricultural scientific principles and emerging technologies in agricultural enterprises to include:

### 4-H Electric Camp

This four-day conference for junior high youth is led by a University of Tennessee faculty and other energy experts. Campers engage in hands-on activities focused on solar energy, wind energy generation, electrical safety, etc. This event aims to teach youth about various forms of energy generation and conservation as well as how to safely engage with them.

### National Youth Science Day

National Youth Science Day (NYSD), held annually, provides hands-on learning experiences for 4-H members across the nation. Each year, a particular science challenge is issued to the 4-H system and local 4-H clubs participate in the said challenge. The 2019 topic focused on computer science.

### Livestock Skill-a-Thon

This educational contest provides youth the opportunity to learn a variety of topics related to the management and production of beef cattle, meat goats, sheep, and swine. Participants in these



events will learn about different breeds of livestock, external parts of livestock, skeletal anatomy, feedstuffs used in livestock diets, equipment used in raising and showing livestock and in processing meat, wholesale and retail cuts of meat derived from livestock, common calculations used to measure animal performance, and profitability.

### Dairy Products Judging

Dairy Products Judging focuses on evaluation and decision-making skills related to milk and milk products such as cheese and ice cream. Participants will learn and demonstrate skills in evaluation of the quality of dairy products as well as differentiation of dairy and non-dairy products on the basis of flavor, color and texture.

### Land Judging

Land judging prepares youth to protect and improve different aspects of the land through leadership training and competition. This competition provides 4-H members an opportunity to learn soil structure, classification, erosion and effective land treatment.

### Dairy Judging

Dairy Judging provides an opportunity for youth to use their knowledge of dairy animal physiology and quality to evaluate and rank classes of dairy cows and heifers. Students will gain experience with the major breakdown, anatomy and physiology of dairy animals along with dairy judging terminology and industry trends.

### Forestry Judging

Forestry Judging focused on the evaluation of wildlife, trees, wood, insects, and forest navigation. Youth competitors will participate in competitions regarding tree identification and measurement, wood identification and quality, insect and bug identification and compass traverse among others.

### 4-H Academic Conference

Held on the University of Tennessee campus, this four-day conference for junior high youth is led by the University of Tennessee faculty and scientists. Delegates participate in hands-on experiments and learning activities in university laboratories and classrooms. Topics for this event include beef, sheep, swine, veterinary science, and food science.

### Meat Identification

This 4-H competition consists of learning the retail and wholesale cuts of beef, pork and lamb as well as variety meats. Youth will learn skills in meat identification and judgment of quality on the basis of color, size, fat content, etc. Using their knowledge of the science behind meat quality, participants will be given the opportunity to identify and evaluate different parts of an animal suitable for consumption.

### Environmental Education camp

Environmental education camp is offered to schools and 4-H clubs throughout the year at the four Tennessee 4-H centers. This three-day two-night camp focuses on environmental topics such as wind energy, soil, agriculture, water, etc. Students participate in hands-on learning centers throughout the camp experience to learn new ideas, engage in experiments, and learn more about the environment.

### 4-H Backyard STEM curriculum

This curriculum, focused on environmental science, natural resources, and stewardship, is intended to support 4-H project work in county 4-H programs as well as enhance instruction in academic settings. Topics include soil, water, wildlife, and ecology, etc.

### Hydroponics curriculum

The 4-H hydroponics curriculum, known as Soilless Growing Systems, includes lesson on growing plants without soil, how the hydroponics industry has developed, the most common types of soilless growing systems, and advanced plant nutrition. Additional activities incorporate concepts such as conservation and limited resources and comparing and contrasting soil-based and soilless growing systems.

### Food Safety curriculum

The Hands On Real-World Lessons for Middle School Classrooms – Food Safety is a comprehensive curriculum designed as a vehicle to reduce the occurrence of foodborne illness, to increase awareness around personal hygiene and to encourage safe food preparation practices. Participants learn how illness can be prevented if consumers adopt proper practices for safe food handling and preparation.

### 4-H Robotics curriculum

In this curriculum, known as Junk Drawer Robotics, youth are challenged to build robots from everyday items. Youth use a Robotics Notebook to record their learning experiences, robotic designs and data from their investigations. There are three sections to this curriculum:

- Level 1 - Give Robotics a Hand
- Level 2 - Robots on the Move
- Level 3 - Mechatronics

\* = Indicates activities could be more STEM Oriented with additional components offered on the State Level as compared to the National Level.

## Tennessee FFA Association Mission

FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education.



## Tennessee 4-H Mission

The mission of Tennessee 4-H is to provide research-based Extension educational experiences that will stimulate young people to gain knowledge, develop life skills, and form positive attitudes to prepare them to become capable, responsible and compassionate adults.