Agricultural Education Curriculum Enhancements
Volume II

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Introduction

The agricultural education curriculum enhancement project was initiated to develop performance-based assessment activities to assist Missouri instructors and students of agriculture in meeting Missouri School Improvement Program (MSIP) standards. The project was unique in that the enhancement activities, while representing new material, were designed to complement and expand upon material instructors were already using.

Each enhancement corresponds to a unit in the existing agricultural curricula and consists of the following parts: a summary page that describes the performance-based assessment activity contained in the enhancement, along with helpful references and strategies and activities in the existing unit that prepare the student for the enhancement activity; an Instructor Guide and Student Handout that provide step-by-step instructions for a performance-based assessment activity that brings together principal unit objectives; and a Scoring Guide that indicates, in detail, the areas being assessed by the activity and the criteria used for assessment and includes spaces for the student's score and additional comments or explanations from the instructor. (For a more detailed explanation of the individual parts of the enhancement, see the Components section, which follows this section.)

Because they build on existing curricula and are designed to work with the instructor's individual teaching strategies, one of the key attributes of the enhancements is their adaptability. The importance of this feature was established during the development process and carries through all aspects of the enhancements in several ways.

First, the enhancements were designed to be flexible as they are currently written. Procedural steps in the Instructor Guide and Student Handout are clear and thorough but not limiting. For instance, a step in the Instructor Guide might indicate that students should incorporate a visual element into an oral report. The step will include suggestions, such as illustrations, a handout, a slide show using presentation software, or some combination of these or other elements, but it is left to the instructor to specify which of these he or she prefers. Likewise, the criterion in the Scoring Guide that corresponds to this aspect of the assessment will be written "Supporting materials emphasize and clarify key points," rather than as a list of a particular kind and quantity of supporting visual elements that the instructor may not want to use. This allows the instructor to more easily guide the activity in a particular direction and to narrow or expand the scope of the activity based on his or her particular requirements. It also encourages the students to apply their creativity to the development of the project.

Second, a number of the activities can be used or adapted for more than one unit. This can be done in two ways. Some activities can be used as they are written to assess student performance in other units. For example, the performance-based assessment activity for Unit IX, Entrepreneurship, of the *Agribusiness Sales, Marketing, and Management* curriculum guide can be used without modification in place of the assessment activity for Unit III, Planning the Farm Business, of the *Agricultural Management and Economics* curriculum guide. Other activities involve a project that can be readily tailored to another unit, such as the performance-based assessment activity for the *Introduction to Swine Production* unit, which is to design a time line that follows the animals from conception to retail. By changing the references and substituting relevant management practices, this activity can be used as the assessment for the *Introduction to Sheep Production* unit. A cross-reference chart is included with the assessments that gives a list of all units, a brief description of their current performance-based assessment activity, and the location of other activities that can be used or adapted for that unit.

And finally, because the enhancements are made available by compact disc, any activity can easily be copied to a separate file and rewritten or adjusted by the instructor while still maintaining the original file unaltered. This allows the instructor the freedom to not only adapt one performance-based activity from one unit to another, but also to change specific aspects within the activity to make it more responsive to his or her needs and the needs of the students. In the Scoring Guide, for instance, the total point value of the assessment can be changed, the weight of any assessment area can be increased or decreased, and criteria can be modified, added, or removed.

It is very important to note, however, that if the instructor does change the activity in any way, whether by using the activity from one unit as the performance-based assessment for another unit or by making changes within the activity, the Show-Me Standards, the References, and the Scoring Guide, as well as the other aspects of the enhancement as it is currently written, may no longer apply. This can be true of even seemingly small adjustments. If the instructor does make any changes to a performance-based assessment activity, he or she should thoroughly review the entire activity for accuracy and suitability and make any additional adjustments these changes necessitate prior to assigning the activity to students.

It is also important to note that the performance-based assessment activities are not a replacement or alternative for activities, assessments, and competencies found in the unit or for more comprehensive activities that address the curriculum guide as a whole, such as the projects completed for the Agricultural Construction and Agricultural Structures classes. Students must complete all required competencies and should only complete the performance-based

assessment activities if they have mastered all the relevant competencies and have the instructor's permission.

These enhancements were designed to be precise, flexible, and functional. All of us who worked on this project sincerely hope that the instructors and students who use them will find them to be a practical and engaging addition to the agricultural curriculum.

Components

Curriculum Guide: This indicates the existing curriculum guide for which the curriculum enhancement was designed. The instructor will need the curriculum guide to complete the curriculum enhancement activity.

Unit: The Unit gives the name and number of the unit within the curriculum guide that the enhancement was designed to assess.

Unit Objective: The Unit Objective indicates what the students should accomplish by completing the unit. The students' mastery of these skills and concepts will be measured by their performance on the performance-based assessment activity contained within the curriculum enhancement.

Show-Me Standards: The Show-Me Standards lists the learner objectives assessed by the enhancement activity. Each enhancement contains a performance-based assessment activity that directly addresses at least one "performance" standard and one "knowledge" standard, although it is possible that the activity addresses other standards as well. Only the most relevant standards are listed.

References: This is the complete bibliographic information for the curriculum guide, as well as other books, web sites, or other reference material used to develop the enhancement or which the instructor or student might find useful to complete the enhancement activity.

Instructional Strategies/Activities: These are activities and strategies already in place in the curriculum. The strategies and activities listed were chosen because they relate directly to the curriculum enhancement activity. There may be additional activities and strategies within the curriculum guide that relate to the overall objectives of the unit.

Performance-Based Assessment: This is a summary of the performance-based assessment activity. It also includes a brief description of the assessment areas addressed by the activity.

Instructor Guide: The Instructor Guide includes step-by-step instructions for administering the performance-based assessment activity. It also includes suggestions and references the instructor may find useful, as well as brief descriptions of the assessment areas addressed by the activity and the criteria used for assessment.

Additional Activities: Following the steps for administering the performance-based assessment activity, some Instructor Guides have a step labeled "Additional Activities." These are activities and strategies that were written by the IML development staff or suggested by committee members based on their classroom experience. Some are suggestions for teaching aids or discussion topics; others are ideas for student activities. Although their purpose is to help students meet the overall objectives of the unit, these activities and strategies were not developed specifically as performance-based assessment activities and should not be used as alternate performance-based assessment activities in their current form.

Student Handout: This is the student's guide to completing the performance-based assessment activity. It is based directly on the Instructor Guide, minus the instructor's directions for conducting the assessment.

Scoring Guide: The Scoring Guide indicates, in detail, the areas being assessed by the activity, the criteria used for assessment, and each area's weight relative to one another and to the activity as a whole. It also includes an area for the student's score and a space for additional comments or explanations from the instructor. Blank Scoring Guides may be handed out to students prior to the activity to identify the assessment criteria in detail, or Scoring Guides may be completed and distributed to the students following the activity, depending on the instructor's preference.

Contents

Performance-based assessment activities are included in this packet for the following units within curricula.

Agricultural Mechanics Unit for Agricultural Science I

Unit I. Common Hand Tools
Unit II. Common Power Tools
Unit III. Woodworking
Unit IV. Tool Sharpening and Reconditioning
Unit V. Arc Welding
Unit VI. Oxyfuel Cutting
Unit VII. Painting

Agricultural Mechanics Unit for Agricultural Science II

Unit I. Common Power Tools
Unit II. Arc Welding
Unit III. Oxyacetylene Welding
Unit IV. Tool Sharpening and Reconditioning
Unit V. Cold Metal Work
Unit VI. Material Selection, Plan Reading, and Interpretation
Unit VII. Painting and Finishing

Advanced Crop Science

Unit I. Overview
Unit II. Plant Biology
Unit III. Soil Fertility and Management
Unit IV. Identifying and Selecting Crops and Seeds
Unit V. Safety, Environment, and Legal Issues
Unit VI. Corn and Grain Sorghum Production
Unit VII. Soybean Production
Unit VIII. Wheat and Small Grain Production
Unit IX. Forage Production
Unit X. Cotton Production
Unit XI. Rice Production

Agricultural Construction Volume I

Unit I. Arc Welding
Unit VI. Project Construction

Agricultural Construction Volume II

Unit II. Oxy-Gas and Other Cutting/Welding Processes
Unit III. Woodworking
Unit IV. Metals
Unit V. Finishing

Agricultural Construction Volume III

Unit I. Oxy-Gas and Other Cutting/Welding Processes (Arc and Plasma Cutting)
Unit II. Arc Welding (Gas Metal Arc Welding)
Unit III. Arc Welding (Gas Tungsten Arc Welding)

Agricultural Structures

Unit I. Working With Plans
Unit II. Home and Farmstead Planning
Unit III. Building Construction
Unit IV. Concrete
Unit V. Electricity
Unit VI. Plumbing
Unit VII. Fencing

Biotechnology: Applications in Agriculture

Unit I. Introduction to Biotechnology
Unit II. Issues in Biotechnology
Unit III. Basic Laboratory Skills
Unit IV. Foundations of Genetic Engineering
Unit V. Animal Technologies
Unit VI. Plant Technologies

Floristry

Unit I. Floristry Industry
Unit II. Plant Identification
Unit III. Post-Harvest Handling
Unit IV. Mechanics of Floral Design
Unit V. Basic Principles of Floral Design
Unit VI. Types of Designs
Unit VII. Shop Operations

Food Science and Technology

Unit I. Principles of Food Preservation
Unit II. Food Processing
Unit III. The Biochemistry of Foods
Unit IV. Food Selection and Consumer Health

Greenhouse Operation and Management

Unit I. The Greenhouse Industry
Unit II. Growing Structures
Unit III. Plant Science Basics
Unit IV. Plant Growth
Unit V. Plant Propagation
Unit VI. Plant Health
Unit VII. Greenhouse Business Management

Small Engine Service and Repair

Module 1. Installing a Magnetron Ignition and Breaker Points
Module 2. Carburetor Service and Repair
Module 3. Rewind Starters
Module 4. Small Engine Compression
Module 5. Governor Adjustment and Repair
Module 6. Lubricating Small Engines
Module 7. Troubleshooting
Module 8. Operation and Maintenance of Small Engines

Cross-Reference Chart for Adapting Performance-Based Assessments

NOTE: This table includes performance-based assessments from volumes I and II of *Agricultural Education Curriculum Enhancements*.

Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Agricultural Science I		
Careers I	Write a report on three different occupations	• *Agribusiness Sales, Marketing, and Management*—Agriculture as an Industry, Personal Development • *Career and Personal Development for Plant Science Core Curriculum* • *Floristry*—Floristry Industry • *Greenhouse Operation and Management*—The Greenhouse Industry • *Leadership and Personal Development*—Leadership and Personal Development for Advanced Students
Introduction to Animal Reproduction	Create a poster on advantages and disadvantages of a common breeding method	• *Advanced Livestock Production and Management*—Breeding, Parturition • *Animal Science*—Animal Health, Reproduction • *Introduction to Beef Production*
Introduction to Agricultural Business	Create an advertisement for an SAE	• *Agribusiness Sales, Marketing, and Management*—Financial Management • *Agricultural Management and Economics*—Economic Principles in Agriculture • *Floristry*—Shop Operations • *Introduction to Specialty Animal Production*
Introduction to Beef Production	Present an oral report that compares and contrasts management options applied by beef producers	• *Advanced Livestock Production and Management*—Selection, Parturition, Animal Health, Herd/Flock Management • *Animal Science*—Reproduction • *Equine Science* • *Exploring Agriculture in America*—Animals in Society • *Introduction to Specialty Animal Production* • *Introduction to Swine Production* • *Sheep Production*

* Most PBAs will require some modifications based on the unit topic and content.
** PBA may be used without any modifications.

Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Introduction to Poultry Production	Design, organize, and participate in a mini Poultry CDE	• *Advanced Livestock Production and Management*—Enterprises, Animal Health, Facilities and Equipment, Herd/Flock Management • *Equine Science* • *Introduction to Beef Production* • *Introduction to Dairy Production* • *Introduction to Specialty Animal Production* • *Introduction to Swine Production* • *Sheep Production*
Sheep Production	Present an oral report on breed characteristics, management practices, and health issues of a given breed of sheep	• *Advanced Livestock Production and Management*—Animal Health, Enterprises, Selection, Breeding, Parturition, Herd/Flock Management • *Animal Science*—Reproduction, Animal Health • *Equine Science* • *Exploring Agriculture in America*—Animals in Society • *Introduction to Beef Production* • *Introduction to Swine Production*
Equine Science	Design a health maintenance, hoof care, and feeding plan for a horse	• *Advanced Livestock Production and Management*—Animal Health, Enterprises, Selection, Breeding, Parturition, Herd/Flock Management • *Animal Science*—Reproduction, Animal Health • *Exploring Agriculture in America*—Animals in Society • *Introduction to Beef Production* • *Introduction to Swine Production* • *Sheep Production*
Introduction to Specialty Animal Production	Present a sales pitch on a specialty animal	• *Advanced Livestock Production and Management*—Animal Health, Enterprises, Selection, Breeding, Parturition, Herd/Flock Management • *Animal Science*—Reproduction, Animal Health • *Exploring Agriculture in America*—Animals in Society • *Introduction to Beef Production* • *Introduction to Swine Production* • *Sheep Production*

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Introduction to Animal Products	Identify the species, wholesale cuts, and retail cuts of meat	*Exploring Agriculture in America*—Introduction to Agriculture
Introduction to Dairy Production	Create a poster on the layout and parts of a dairy operation	• *Advanced Livestock Production and Management*—Animal Health, Enterprises, Selection, Breeding, Parturition, Herd/Flock Management • *Animal Science*—Reproduction, Animal Health • *Exploring Agriculture in America*—Animals in Society • *Introduction to Beef Production* • *Introduction to Swine Production* • *Sheep Production*
Introduction to Swine Production	Prepare a time line of a pig's life from conception to retail	• *Advanced Livestock Production and Management*—Animal Health, Enterprises, Selection, Breeding, Parturition, Herd/Flock Management • *Animal Science*—Reproduction, Animal Health • *Exploring Agriculture in America*—Animals in Society • *Introduction to Beef Production* • *Introduction to Dairy Production* • *Sheep Production*
Introduction to Animal Nutrition	Write a summary that compares and contrasts two similar animal feeds	*Animal Science*—Nutrition
Agricultural Mechanics Unit for Agricultural Science I • Common Hand Tools	Design, organize, and participate in a tool identification contest	*Agricultural Mechanics Unit for Agricultural Science I* and *Agricultural Mechanics Unit for Agricultural Science II*—Common Power Tools
• Common Power Tools	Give a safety presentation for a power tool	*Agricultural Mechanics Unit for Agricultural Science I*—Common Hand Tools
• Woodworking	Construct a woodworking project	• *Agricultural Construction Volume I*—Project Construction • *Agricultural Construction Volume II*—Woodworking
• Tool Sharpening and Reconditioning	Participate in a tool reconditioning contest	None identified

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
• Arc Welding	Make common flat position welds as part of a welding contest	• *Agricultural Construction Volume I*—Arc Welding • *Agricultural Mechanics Unit for Agricultural Science II*—Arc Welding
• Oxyfuel Cutting	Make basic cuts as part of a class-wide contest	*Agricultural Construction Volume II*—Oxy-Gas and Other Cutting/Welding Processes
• Painting	Finish a project using paint and a paintbrush	• *Agricultural Construction Volume II*—Finishing • *Agricultural Mechanics Unit for Agricultural Science II*—Painting and Finishing
Agricultural Science II		
Introduction to Grassland Management • Grasslands and Grassland Plants	Create a plant collection from a grassland area	• *Advanced Crop Science*—Plant Biology, Identifying and Selecting Crops and Seeds, Forage Production • *Floristry*—Plant Identification • *Greenhouse Operation and Management*—Plant Science Basics
• Soil Management	Create a chart and present an oral report that analyzes soil test results	• *Advanced Crop Science*—Soil Fertility and Management • *Soil Science*
• Grassland Management Practices	Create a diagram and present an oral report that evaluates a grassland site for its ability to sustain wildlife	None identified
Crop Science	Create, organize, and participate in a mini Agronomy CDE	• *Advanced Crop Science*—Plant Biology, Identifying and Selecting Crops and Seeds, Forage Production • *Floristry*—Plant Identification • *Introduction to Grassland Management*—Grasslands and Grassland Plants • *Plant Science*
Plant Science	Conduct a seed germination experiment and write a summary on findings	• *Advanced Crop Science*—Plant Biology • *Greenhouse Operation and Management*—Plant Growth, Plant Propagation
Career and Personal Development for Plant Science Core Curriculum	Write a personal development plan	• *Agribusiness Sales, Marketing, and Management*—Personal Development, Agriculture as an Industry • *Careers I*

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** PBA may be used without any modifications.

Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Entomology	Create a collection of insects found in Missouri	*Floristry*—Plant Identification
Soil Science	Create a table that analyzes how soil composition relates to fertility and soil management	• *Advanced Crop Science*—Soil Fertility and Management • *Introduction to Grassland Management*—Soil Management
Fruit and Vegetable Production	Develop a calendar for cultivating and harvesting fruits and vegetables	• *Advanced Crop Science*—Plant Biology • *Introduction to Grassland Management*—Grasslands and Grassland Plants
Agricultural Mechanics Unit for Agricultural Science II • Common Power Tools	Give a safety presentation for a power tool	*Agricultural Mechanics Unit for Agricultural Science I*—Common Hand Tools
• Arc Welding	Make out-of-position welds as part of a welding contest	• *Agricultural Construction Volume I*—Arc Welding • *Agricultural Mechanics Unit for Agricultural Science I*—Arc Welding
• Oxyacetylene Welding	Make basic welds as part of a class-wide contest	*Agricultural Construction Volume II*—Oxy-Gas and Other Cutting/Welding Processes
• Tool Sharpening and Reconditioning	Participate in a tool reconditioning contest	None identified
• Cold Metal Work	Construct a metalworking project	*Agricultural Construction Volume II*—Metals
• Material Selection, Plan Reading, and Interpretation	Devise a plan of procedure, cutting list, and bill of materials for a project	*Agricultural Structures*—Working With Plans
• Painting and Finishing	Paint a project using air spray or airless spray equipment	• *Agricultural Construction Volume II*—Finishing • *Agricultural Mechanics Unit for Agricultural Science I*—Painting
Animal Science		
Nutrition	Design a balanced feed ration and explain the selection of ration components in a written report	*Introduction to Animal Nutrition*

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Genetics	Rank bulls to breed an imaginary herd and explain the placement in a written report	• *Advanced Livestock Production and Management*—Issues in Animal Agriculture, Selection • *Biotechnology: Applications in Agriculture*—Foundations of Genetic Engineering, Animal Technologies
Reproduction	Create a time line on a group of livestock from birth to weaning and present the findings in an oral report	• *Advanced Livestock Production and Management*—Parturition • *Biotechnology: Applications in Agriculture*—Animal Technologies • *Introduction to Animal Reproduction*
Animal Health	Prepare a written checklist and present an oral report on a health management plan for a livestock species	• *Advanced Livestock Production and Management*—Animal Health, Herd/Flock Management • *Equine Science*
Exploring Agriculture in America		
Introduction to Agriculture	Present an oral report that identifies top-producing states for specific agricultural products	• *Agribusiness Sales, Marketing, and Management*—Agriculture as an Industry • *Careers I* • *Exploring Agriculture in America*—Products from Agriculture
Plant Science	Evaluate plants in a plant care contest	• *Advanced Crop Science*—Plant Biology, Identifying and Selecting Crops and Seeds, Forage Production • *Biotechnology: Applications in Agriculture*—Plant Technologies • *Exploring Agriculture in America*—Plant Science • *Floristry*—Plant Identification • *Introduction to Grassland Management*—Grasslands and Grassland Plants** • *Plant Science* **
Animals in Society	Design a poster on a care regimen and budget for a companion or production animal	• *Biotechnology: Applications in Agriculture*—Animal Technologies • *Equine Science*
Products from Agriculture	Design a poster that identifies food and nonfood agricultural products	• *Biotechnology: Applications in Agriculture*—Introduction to Biotechnology • *Introduction to Animal Products*
Natural Resources and Conservation	Present an oral report on an environmental problem and how it could be corrected	*Advanced Crop Science*—Safety, Environment, and Legal Issues
Leadership and Personal Development	Write a report that includes five personal goals and outlines how to reach each goal	*Career and Personal Development for Plant Science Core Curriculum*

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Basic Home and Farmstead Safety and Maintenance	Design a home safety checklist	*Agricultural Structures*—Home and Farmstead Planning
Agribusiness Sales, Marketing, and Management		
Agriculture as an Industry	Write a report that describes three different agribusiness job positions	• *Career and Personal Development for Plant Science Core Curriculum* • *Careers I* • *Exploring Agriculture in America*—Products from Agriculture • *Leadership and Personal Development*—Leadership and Personal Development for Advanced Students
Economic Principles in Agribusiness	Produce and present a lesson on an economic principle	*Agricultural Management and Economics*—Economic Principles in Agriculture **
Financial Management	Establish a budget for an SAE	*Agricultural Management and Economics*—Economic Principles in Agriculture
Personal Development	Create a career development and job search plan	• *Agribusiness Sales, Marketing, and Management*—Agriculture as an Industry • *Career and Personal Development for Plant Science Core Curriculum* • *Careers I* • *Leadership and Personal Development*—Leadership and Personal Development for Advanced Students
Communication Skills	Analyze a sales presentation and participate in a class discussion	• *Biotechnology: Applications in Agriculture*—Issues in Biotechnology • *Leadership and Personal Development*—Leadership II
Preparing for a Sale	Write a report that analyzes the sale and use of an agriculture-related product	None identified
Making a Sale	Give a sales presentation on an agriculture-related product	*Introduction to Specialty Animal Production*
Promotional Tools	Create a commercial for an agriculture-related product	• *Floristry*—Shop Operations • *Introduction to Agricultural Business*
Entrepreneurship	Plan, organize, and execute a school-based, fund-raising activity	• *Agricultural Management and Economics*—Planning the Farm Business** • *Greenhouse Operation and Management*—Greenhouse Business Management

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Advanced Livestock Production and Management		
Issues in Animal Agriculture	Research a position on the use of biotechnology and participate in a classroom debate on the topic	*Biotechnology: Applications in Agriculture*—Animal Technologies, Issues in Biotechnology**
Enterprises	Give an oral report on the basic resources needed to establish and maintain a livestock enterprise	*Introduction to Dairy Production*
Selection	Judge classes of livestock and prepare written explanations for the judgments	• *Animal Science*—Genetics • *Introduction to Animal Reproduction* • *Introduction to Poultry Production*
Breeding	Present an oral report on factors that affect conception rates and hatchability	None identified
Parturition	Create a birthing checklist on a given species	None identified
Animal Health	Design a poster and handout that outlines symptoms, causes, treatment, and prevention of a livestock health problem	• *Animal Science*—Animal Health • *Equine Science*
Facilities and Equipment	Devise a farm plan for a type of livestock and present an oral report that explains the plan	• *Agricultural Structures*—Home and Farmstead Planning • *Introduction to Dairy Production*
Animal Feeding	Create a display board that explains the feeding options available for a type of livestock	• *Animal Science*—Nutrition • *Introduction to Animal Nutrition*
Herd/Flock Management	Give an oral presentation that explains and demonstrates a management practice	*Animal Science*—Animal Health
Marketing	Write a market plan for two livestock species and include the differences and similarities between the plans	• *Agribusiness Sales, Marketing, and Management*—Promotional Tools • *Introduction to Agricultural Business*
Agricultural Management and Economics		
Economic Principles in Agriculture	Produce and present a lesson on an economic principle	*Agribusiness Sales, Marketing, and Management*—Economic Principles in Agribusiness
Business Management	Present an oral report and lead a class discussion on a factor of business management	*Greenhouse Operation and Management*—Greenhouse Business Management

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Planning the Farm Business	Plan, organize, and execute a school-based, fund-raising activity	• *Agribusiness Sales, Marketing, and Management*—Entrepreneurship • *Greenhouse Operation and Management*—Greenhouse Business Management
Operating the Agricultural Business	Create a promotional display for an SAE project or a local business	• *Floristry*—Shop Operations • *Introduction to Agricultural Business*
Developing Programs of Supervised Agricultural Experience		
Developing an SAE Program	Complete a form that describes the design of an SAE	None identified
Using the *Missouri Agricultural Record Book for Secondary Students*	Use sample entries to complete forms in the *Missouri Agricultural Record Book for Secondary Students*	None identified
Analyzing the SAE Program	Complete an FFA State Proficiency Award application	None identified
Leadership and Personal Development		
Leadership I	Interview an FFA member and create a "top 10 list" of membership benefits based on the interview	None identified
Leadership II	Develop, organize, and present a panel discussion on an aspect of FFA	None identified
Leadership and Personal Development for Advanced Students	Create a résumé and a letter of application for a job	*Exploring Agriculture in America*—Leadership and Personal Development
Advanced Crop Science		
Overview	Present an oral report that discusses how governmental policies and current trends influence agriculture	• *Advanced Crop Science*—Safety, Environment, and Legal Issues • *Biotechnology: Applications in Agriculture*—Issues in Biotechnology
Plant Biology	Prepare a time line of the growth stages of a crop seed then compare to the actual growth stages	• *Fruit and Vegetable Production* • *Greenhouse Operation and Management*—Plant Growth, Plant Propagation • *Plant Science*

* Most PBAs will require some modifications based on the unit topic and content.
** PBA may be used without any modifications.

Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Soil Fertility and Management	Collect and analyze soil samples and present an oral report that recommends appropriate crop and management strategies for the soil	• *Introduction to Grassland Management*—Soil Management • *Soil Science*
Identifying and Selecting Crops and Seeds	Create a collection of crop and grassland plants	• *Advanced Crop Science*—Forage Production • *Floristry*—Plant Identification • *Greenhouse Operation and Management*—Plant Science Basics
Safety, Environment, and Legal Issues	Write a report explaining safety, environmental, or legal issues in agriculture	• *Advanced Crop Science*—Overview • *Biotechnology: Applications in Agriculture*—Issues in Biotechnology
Corn and Grain Sorghum Production	Write a report explaining a key aspect of production and develop five questions about the topic to be used for a class review	*Advanced Crop Science*—Soybean Production, Wheat and Small Grain Production, Cotton Production, Rice Production
Soybean Production	Present an oral report that compares and contrasts management decisions of regional soybean producers	*Advanced Crop Science*—Corn and Grain Sorghum Production, Wheat and Small Grain Production, Cotton Production, Rice Production
Wheat and Small Grain Production	Devise a calendar that follows wheat or small grain from field preparation through marketing	*Advanced Crop Science*—Corn and Grain Sorghum Production, Soybean Production, Cotton Production, Rice Production
Forage Production	Collect and identify common forage crops and their seeds	*Advanced Crop Science*—Corn and Small Grain Production, Soybean Production, Wheat and Small Grain Production, Cotton Production, Rice Production
Cotton Production	Create a slide show presentation that explains a key aspect of cotton production	*Advanced Crop Science*—Corn and Small Grain Production, Soybean Production, Wheat and Small Grain Production, Rice Production
Rice Production	Create a poster or slide show presentation that identifies and describes food and nonfood by-products and end products of rice production	*Advanced Crop Science*—Corn and Small Grain Production, Soybean Production, Wheat and Small Grain Production, Cotton Production
Agricultural Construction Volume I		
Arc Welding	Perform basic welds, identify welding equipment, and answer questions about related equipment and procedures	• *Agricultural Mechanics Unit for Agricultural Science I*—Arc Welding • *Agricultural Mechanics Unit for Agricultural Science II*—Arc Welding
Project Construction	Select, plan, and complete a construction project	• *Agricultural Structures*—Building Construction, Concrete

* Most PBAs will require some modifications based on the unit topic and content.
** PBA may be used without any modifications.

Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Agricultural Construction Volume II		
Oxy-Gas & Other Cutting/Welding Processes	Perform basic welds and cuts, identify welding and cutting equipment, and answer questions about related equipment and procedures	• *Agricultural Construction Volume III*—Oxy-Gas and Other Cutting/Welding Processes • *Agricultural Mechanics Unit for Agricultural Science I*—Oxyfuel Cutting
Woodworking	Construct a woodworking project	• *Agricultural Construction Volume I*—Project Construction • *Agricultural Mechanics Unit for Agricultural Science I*—Woodworking
Metals	Construct a metalworking project	*Agricultural Mechanics Unit for Agricultural Science II*—Cold Metal Work
Finishing	Prepare, prime, and finish a project	• *Agricultural Mechanics Unit for Agricultural Science I*—Painting • *Agricultural Mechanics Unit for Agricultural Science II*—Painting and Finishing
Agricultural Construction Volume III		
Oxy-Gas & Other Cutting/Welding Processes	Make cuts using the air carbon-arc or plasma-arc outfit, identify cutting equipment, and answer questions about related equipment and procedures	• *Agricultural Construction Volume II*—Oxy-Gas and Other Cutting/Welding Processes • *Agricultural Mechanics Unit for Agricultural Science I*—Oxyfuel Cutting
Arc Welding (GMAW/MIG)	Perform welds using the GMAW/MIG outfit, identify GMAW/MIG equipment, and answer questions about related equipment and procedures	• *Agricultural Construction Volume I*—Arc Welding • *Agricultural Construction Volume III*—Arc Welding (GTAW/TIG) • *Agricultural Mechanics Unit for Agricultural Science I*—Arc Welding • *Agricultural Mechanics Unit for Agricultural Science II*—Arc Welding
Arc Welding (GTAW/TIG)	Perform welds using the GTAW/TIG outfit, identify GTAW/TIG equipment, and answer questions about related equipment and procedures	• *Agricultural Construction Volume I*—Arc Welding • *Agricultural Construction Volume III*—Arc Welding (GMAW/MIG) • *Agricultural Mechanics Unit for Agricultural Science I*—Arc Welding • *Agricultural Mechanics Unit for Agricultural Science II*—Arc Welding
Agricultural Structures		
Working With Plans	Draw a construction plan and develop a plan of procedure, cutting bill of materials, and purchasing bill of materials	*Agricultural Mechanics Unit for Agricultural Science II*—Material Selection, Plan Reading, and Interpretation

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Home and Farmstead Planning	Devise a farmstead plan and explain design decisions in writing	*Exploring Agriculture in America*—Basic Home and Farmstead Safety and Maintenance
Building Construction	Lay out joists and rafters, apply roofing skills, and answer questions about roofing materials	*Agricultural Construction Volume I*—Project Construction
Concrete	Make a concrete patio block	*Agricultural Construction Volume I*—Project Construction
Electricity	Diagram a wiring plan for an agricultural structure and complete a bill of materials for the project	None identified
Plumbing	Use plumbing techniques to join dissimilar types of pipe	None identified
Fencing	Devise a fencing plan that complies with local codes and includes the materials used, cost, and layout of the fence	*Agricultural Structures*—Working With Plans
Biotechnology: Applications in Agriculture		
Introduction to Biotechnology	Develop a pamphlet or poster and oral presentation about a genetically manipulated food product	*Advanced Livestock Production and Management*—Issues in Animal Agriculture
Issues in Biotechnology	Conduct a debate on issues in biotechnology	None identified
Basic Laboratory Skills	Create a proposal for a scientific experiment	None identified
Foundations of Genetic Engineering	Extract DNA from a plant or animal source and analyze the results in a written report	*Biotechnology: Applications in Agriculture*—Plant Technologies
Animal Technologies	Describe the process and benefits of bovine embryo transfer in a presentation	None identified
Plant Technologies	Construct and use an electrophoresis device and write a summary of the results	None identified

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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Floristry		
Floristry Industry	Create a poster about training and educational opportunities in floristry	• *Agribusiness Sales, Marketing, and Management*—Agriculture as an Industry • *Career and Personal Development for Plant Science Core Curriculum* • *Careers I* • *Leadership and Personal Development*—Leadership and Personal Development for Advanced Students
Plant Identification	Gather plant information and illustrations and present them in a catalog	• *Advanced Crop Science*—Forage Production, Identifying and Selecting Crops and Seeds • *Greenhouse Operation and Management*—Plant Science Basics • *Introduction to Grassland Management*—Grasslands and Grassland Plants
Post-Harvest Handling	Develop procedures for treatment of potted plants and cut plant materials and present them in the form of care cards	None identified
Mechanics of Floral Design	Complete a comprehensive test that covers the tools, supplies, materials, and procedures used in floral design	None identified
Basic Principles of Floral Design	Study, evaluate, and critique floral arrangements and present findings in a written and oral report	None identified
Types of Designs	Plan and produce floral arrangements for a themed display	*Floristry*—Basic Principles of Floral Design
Shop Operations	Create an advertising message to promote the sale of floral produce	• *Agribusiness Sales, Marketing, and Management*—Promotional Tools • *Greenhouse Operation and Management*—Greenhouse Business Management • *Introduction to Agricultural Business*
Food Science and Technology		
Principles of Food Preservation	Present an oral report about a food preservation technique	None identified
Food Processing	Create and describe a food product and design its packaging	None identified

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** PBA may be used without any modifications.

Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
The Biochemistry of Foods	Design a poster about a commodity, product, or application created or improved by biochemistry and give an oral report based on the poster	None identified
Food Selection and Consumer Health	Create a chart that tracks the nutritional content of one's diet and write a summary of the results	None identified
Greenhouse Operation and Management		
The Greenhouse Industry	Create a poster that describes the requirements of a position in the greenhouse industry	• *Agribusiness Sales, Marketing, and Management*—Agriculture as an Industry • *Careers I* • *Floristry*—Floristry Industry • *Leadership and Personal Development*—Leadership and Personal Development for Advanced Students
Growing Structures	Make an oral presentation that proposes repairs or improvements to the school's greenhouse and includes the materials and costs involved	None identified
Plant Science Basics	Identify and label plants and present them in a plant collection	• *Advanced Crop Science*—Forage Production • *Floristry*—Plant Identification • *Greenhouse Operation and Management*—Plant Science Basics • *Introduction to Grassland Management*—Grasslands and Grassland Plants
Plant Growth	Conduct a seed germination experiment and write a summary of the findings	• *Advanced Crop Science*—Plant Biology • *Fruit and Vegetable Production* • *Greenhouse Operation and Management*—Plant Propagation • *Plant Science* **
Plant Propagation	Propagate a plant and write a report that describes the process	• *Advanced Crop Science*—Plant Biology • *Fruit and Vegetable Production* • *Plant Science*
Plant Health	Write a report that describes a plant pest and disease and identifies the control methods used	None identified

* Most PBAs will require some modifications based on the unit topic and content.
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Curriculum/Unit	Performance-Based Assessment (PBA)	Alternative PBAs*
Greenhouse Business Management	Generate a cost analysis and marketing plan for a greenhouse	• *Agribusiness Sales, Marketing, and Management*—Promotional Tools • *Floristry*—Shop Operations • *Introduction to Agricultural Business*
Small Engine Service and Repair		
Installing a Magnetron Ignition and Breaker Points	Identify ignition system tools and components and install and test various ignitions	None identified
Carburetor Service and Repair	Identify and service a variety of carburetors, fuel filters, and air cleaners	None identified
Rewind Starters	Identify starter components and service a variety of small engine starters	None identified
Small Engine Compression	Identify valve tools and their uses and inspect and service the valve train of a small engine	None identified
Governor Adjustment and Repair	Identify governor components and inspect, service, and repair small engine governor systems	None identified
Lubricating Small Engines	Select the correct type and grade of oil and inspect and service the lubrication system of a small engine	None identified
Troubleshooting	Evaluate the condition of a small engine and eliminate engine malfunctions	None identified
Operation and Maintenance of Small Engines	Operate and maintain a small engine	None identified

* Most PBAs will require some modifications based on the unit topic and content.
** PBA may be used without any modifications.

Show-Me Standards Table

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	Show-Me Standards Applicable to Activity
Agricultural Mechanics Unit for Agricultural Science I Common Hand Tools	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation CA6: Participating in formal and informal presentations and discussions of issues and ideas
Common Power Tools	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences HP5: Methods used to assess health, reduce risk factors, and avoid high-risk behaviors (such as violence, tobacco, alcohol and other drug use)
Woodworking	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Tool Sharpening and Reconditioning	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Arc Welding	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Oxyfuel Cutting	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Agricultural Mechanics Unit for Agricultural Science I (continued) Painting	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Agricultural Mechanics Unit for Agricultural Science II Common Power Tools	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences HP5: Methods used to assess health, reduce risk factors, and avoid high-risk behaviors (such as violence, tobacco, alcohol and other drug use)
Arc Welding	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Oxyacetylene Welding	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Tool Sharpening and Reconditioning	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Cold Metal Work	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Agricultural Mechanics Unit for Agricultural Science II (continued) Material Selection, Plan Reading, and Interpretation	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Painting and Finishing	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals
Advanced Crop Science Overview	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation CA6: Participating in formal and informal presentations and discussions of issues and ideas
Plant Biology	1.3: Design and conduct field and laboratory investigations to study nature and society SC5: Processes (such as plate movement, water cycle, air flow) and interactions of Earth's biosphere, atmosphere, lithosphere, and hydrosphere
Soil Fertility and Management	1.3: Design and conduct field and laboratory investigations to study nature and society SC7: Processes of scientific inquiry (such as formulating and testing hypotheses)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Advanced Crop Science (continued) Identifying and Selecting Crops and Seeds	1.3: Design and conduct field and laboratory investigations to study nature and society CA1: Speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization)
Safety, Environment, and Legal Issues	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences SC8: Impact of science, technology and human activity on resources and the environment
Corn and Grain Sorghum Production	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences SC8: Impact of science, technology and human activity on resources and the environment
Soybean Production	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences CA6: Participating in formal and informal presentations and discussions of issues and ideas
Wheat and Small Grain Production	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation SC8: Impact of science, technology and human activity on resources and the environment
Forage Production	1.3: Design and conduct field and laboratory investigations to study nature and society SC7: Processes of scientific inquiry (such as formulating and testing hypotheses)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Advanced Crop Science (continued) Cotton Production	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation SS7: The use of tools of social science inquiry (such as surveys, statistics, maps, documents)
Rice Production	1.2: Conduct research to answer questions and evaluate information and ideas SC8: Impact of science, technology and human activity on resources and the environment
Agricultural Construction Volume I Arc Welding	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Project Construction	2.5: Perform or produce works in the fine and practical arts MA2: Geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes
Agricultural Construction Volume II Oxy-Gas and Other Cutting/ Welding Processes	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Agricultural Construction Volume II (continued) Woodworking	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Metals	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Finishing	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Agricultural Construction Volume III Oxy-Gas and Other Cutting/ Welding Processes	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Arc Welding (GMAW/MIG)	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Agricultural Construction Volume III (continued) Arc Welding (GTAW/TIG)	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Agricultural Structures Working with Plans	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation MA2: Geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes
Home and Farmstead Planning	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation CA6: Participating in formal and informal presentations and discussions of issues and ideas
Building Construction	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers MA2: Geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes
Concrete	2.5: Perform or produce works in the fine and practical arts MA2: Geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Agricultural Structures (continued) Electricity	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Plumbing	2.5: Perform or produce works in the fine and practical arts CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Fencing	3.8: Assess costs, benefits and other consequences of proposed solutions SS7: The use of tools of social science inquiry (such as surveys, statistics, maps, documents)
Biotechnology: Applications in Agriculture Introduction to Biotechnology	3.4: Evaluate the processes used in recognizing and solving problems SC8: Impact of science, technology and human activity on resources and the environment
Issues in Biotechnology	4.1: Explain reasoning and identify information used to support decisions SC8: Impact of science, technology and human activity on resources and the environment
Basic Laboratory Skills	1.1: Develop questions and ideas to initiate and refine research SC7: Processes of scientific inquiry (such as formulating and testing hypotheses)
Foundations of Genetic Engineering	1.3: Design and conduct field and laboratory investigations to study nature and society SC7: Processes of scientific inquiry (such as formulating and testing hypotheses)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	Show-Me Standards Applicable to Activity
Biotechnology: Applications in Agriculture (continued) Animal Technologies	3.4: Evaluate the processes used in recognizing and solving problems SC8: Impact of science, technology and human activity on resources and the environment
Plant Technologies	1.2: Conduct research to answer questions and evaluate information and ideas SC3: Characteristics and interactions of living organisms
Floristry Floristry Industry	4.8: Explore, prepare for and seek educational and job opportunities SS6: Relationships of the individual and groups to institutions and cultural traditions
Plant Identification	1.4: Use technological tools and other resources to locate, select and organize information SC3: Characteristics and interactions of living organisms
Post-Harvest Handling	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation SC3: Characteristics and interactions of living organisms
Mechanics of Floral Design	1.6: Discover and evaluate patterns and relationships in information, ideas and structures FA3: The vocabulary to explain perceptions about and evaluations of works in dance, music, theater and visual arts
Basic Principles of Floral Design	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation FA2: The principles and elements of different art forms

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Floristry (continued) Types of Designs	2.5: Perform or produce works in the fine and practical arts FA1: Process and techniques for the production, exhibition or performance of one or more of the visual or performed arts
Shop Operations	4.5: Develop, monitor and revise plans of action to meet deadlines and accomplish goals SS4: Economic concepts (including productivity and the market system) and principles (including the laws of supply and demand)
Food Science and Technology Principles of Food Preservation	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences CA6: Participating in formal and informal presentations and discussions of issues and ideas
Food Processing	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences FA1: Process and techniques for the production, exhibition or performance of one or more of the visual or performed arts
The Biochemistry of Foods	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation CA6: Participating in formal and informal presentations and discussions of issues and ideas

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Food Science and Technology (continued) Food Selection and Consumer Health	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation HP5: Methods used to assess health, reduce risk factors, and avoid high-risk behaviors (such as violence, tobacco, alcohol and other drug use)
Greenhouse Operation and Management The Greenhouse Industry	4.8: Explore, prepare for and seek educational and job opportunities CA6: Participating in formal and informal presentations and discussions of issues and ideas
Growing Structures	1.1: Develop questions and ideas to initiate and refine research CA1: Speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization)
Plant Science Basics	1.3: Design and conduct field and laboratory investigations to study nature and society SC3: Characteristics and interactions of living organisms
Plant Growth	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation SC7: Processes of scientific inquiry (such as formulating and testing hypotheses)
Plant Propagation	2.1: Plan and make written, oral and visual presentations for a variety of purposes and audiences CA1: Speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Greenhouse Operation and Management (continued) Plant Health	1.4: Use technological tools and other resources to locate, select and organize information SC3: Characteristics and interactions of living organisms
Greenhouse Business Management	1.8: Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation MA1: Addition, subtraction, multiplication and division; other number sense, including numeration and estimation; and the application of these operations and concepts in the workplace and other situations
Small Engine Service and Repair Installing a Magnetron Ignition and Breaker Points	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Carburetor Service and Repair	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Rewind Starters	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)

Performance-Based Assessment Activity (One for Each Curriculum or Unit Listed Below)	**Show-Me Standards Applicable to Activity**
Small Engine Service and Repair (continued) Small Engine Compression	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Governor Adjustment and Repair	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Lubricating Small Engines	1.10: Apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Troubleshooting	3.1: Identify problems and define their scope and elements CA3: Reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals)
Operation and Maintenance of Small Engines	4.7: Identify and apply practices that preserve and enhance the safety and health of self and others HP5: Methods used to assess health, reduce risk factors, and avoid high-risk behaviors (such as violence, tobacco, alcohol and other drug use)