

## Introduction to Agriculture, Food, and Natural Resources

### Course Description:

- Suggested grade level: 9<sup>th</sup> – 12<sup>th</sup>
- Pre-requisite: None
- Available Credit: ½ credit
- Text: *Agriscience: Fundamentals and Applications, 4<sup>th</sup> Ed*; Delmar Learning
- Students will explore career opportunities in the ag industry and leadership development opportunities. Students will be introduced to plant and animal sciences, natural resources, and horticulture. Students will get the chance to construct basic woodworking projects after successfully completing the shop safety portion of the course.

### Core Technical Standards and Examples

Indicator #1: Develop and understanding of the role of FFA in Agricultural Education.			
Bloom's Taxonomy Level	Standard	Supporting Concepts/Skills	Assessment and Resources
Evaluation	ITA1.1 Students will be able to summarize the history and organization of the FFA.	<ul style="list-style-type: none"> <li>• Explain how, when and why the FFA was organized.</li> <li>• Explain the mission and strategies, colors, motto, parts of the emblem, and the organizational structure of the FFA.</li> <li>• Recite and explain the meaning of the FFA Creed.</li> </ul>	<ul style="list-style-type: none"> <li>• FFA Unit</li> <li>• FFA Student Handbook</li> </ul>
Evaluation	ITA1.2 Students will be able to summarize opportunities in the FFA.	<ul style="list-style-type: none"> <li>• Explain how the FFA develops leadership skills, personal growth, and career success.</li> <li>• Summarize major local, state, and national activities available to FFA members.</li> <li>• Compare the FFA Degree areas.</li> <li>• Summarize the FFA Proficiency awards.</li> <li>• Prepare a presentation on team and individual CDEs.</li> </ul>	<ul style="list-style-type: none"> <li>• FFA Unit</li> <li>• FFA Student Handbook</li> </ul>

<b>Indicator #2:</b> Determine the benefits and types of Supervised Agricultural Experience Programs.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Analysis	ITA2.1 Students will compare types of SAE programs.	<ul style="list-style-type: none"> <li>• Compare and contrast entrepreneurship and job site SAEs.</li> <li>• Explain research and exploratory SAEs.</li> <li>• Explain the characteristics of a good SAE and responsibilities involved.</li> </ul>	<ul style="list-style-type: none"> <li>• SAE Unit</li> <li>• FFA Student Handbook</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 2 (You and the New Millennium)</li> </ul> </li> </ul>
Evaluation	ITA2.2 Students will be able to plan and implement an SAE.	<ul style="list-style-type: none"> <li>• Summarize the steps in planning an SAE.</li> <li>• Summarize the parts of an annual SAE program plan.</li> <li>• Summarize the function of a training plan and/or agreement in an SAE program.</li> <li>• Summarize the importance of keeping records on an SAE.</li> <li>• Summarize the types of financial records needed to support a chosen SAE.</li> <li>• Complete and annual SAE record book and summaries.</li> </ul>	<ul style="list-style-type: none"> <li>• SAE Unit</li> <li>• Record Book Project</li> <li>• FFA Student Handbook</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 2 (You and the New Millennium)</li> </ul> </li> </ul>

<b>Indicator #3:</b> Define and discuss the concept of Natural Resources.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Knowledge	ITA3.1 Students will be able to list and describe the major categories of natural resources in America.	<ul style="list-style-type: none"> <li>• Explain what makes something a natural resource.</li> <li>• Categorize resources as renewable or non-renewable.</li> </ul>	<ul style="list-style-type: none"> <li>• Natural Resources Unit</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 3 (Natural Resources Mgmt)</li> </ul> </li> </ul>
Evaluation	ITA3.2 Students will summarize the history of conservation in the United States.	<ul style="list-style-type: none"> <li>• Compare and contrast exploitation, conservation, and preservation as they relate to natural resources management.</li> <li>• Summarize those individuals instrumental to the field of natural resources and their accomplishments.</li> <li>• Explain the role of the federal government in natural resource legislation.</li> </ul>	<ul style="list-style-type: none"> <li>• Natural Resources Unit</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 3 (Natural Resources Mgmt)</li> </ul> </li> </ul>

<b>Indicator #4:</b> Demonstrate an understanding of Animal Science Systems.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Application	ITA4.1 Students will examine the animal science industries.	<ul style="list-style-type: none"> <li>• Classify the common breeds of animals in each species.</li> <li>• Explain how to select animals for production or use of each species.</li> </ul>	<ul style="list-style-type: none"> <li>• Animal Science Unit</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 8 (Animal Sciences)</li> </ul> </li> </ul>
Analysis	ITA4.2 Students will be able to summarize current topics in animal science.	<ul style="list-style-type: none"> <li>• Analyze present and future trends in the animal science industry.</li> <li>• Explain ways animals help people.</li> <li>• Determine ethics involved in animal production.</li> <li>• Summarize animals used for genetic engineering and biotechnology.</li> </ul>	<ul style="list-style-type: none"> <li>• Animal Science Unit</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 8 (Animal Sciences)</li> </ul> </li> </ul>
Application	ITA4.3 Students will be able to summarize career opportunities in animal science.	<ul style="list-style-type: none"> <li>• Compare interests and aptitudes to an occupational area.</li> <li>• Develop goals related to future employment.</li> </ul>	<ul style="list-style-type: none"> <li>• Animal Science Unit</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 8 (Animal Sciences)</li> </ul> </li> </ul>

<b>Indicator #5:</b> Demonstrate an understanding of plant structure and function.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Evaluation	ITA5.1 Students will be able to summarize the functions and physiology of cells and seeds, the basics and beginnings.	<ul style="list-style-type: none"> <li>Summarize the cellular structure of plants.</li> <li>Explain the structure and kinds of seeds.</li> <li>Summarize the process of seed germination.</li> <li>Summarize the conditions required for germination.</li> <li>Explain the importance for seed quality.</li> <li>Summarize plant responses to varying amounts of water, varying temperatures and soil fertility.</li> </ul>	<ul style="list-style-type: none"> <li>Plant Science Unit</li> <li>Agriscience Textbook               <ul style="list-style-type: none"> <li>Section 5 (Plant Sciences)</li> </ul> </li> </ul>
Evaluation	ITA 5.2 Students will be able to summarize the control of plant growth and development.	<ul style="list-style-type: none"> <li>Summarize Plant Growth Regulators (PGRs) and their functions.</li> <li>Summarize tropisms.</li> <li>Summarize commercial uses of plant growth regulators.</li> </ul>	<ul style="list-style-type: none"> <li>Plant Science Unit</li> <li>Agriscience Textbook               <ul style="list-style-type: none"> <li>Section 5 (Plant Sciences)</li> </ul> </li> </ul>
Analysis	ITA5.3 Students will be able to describe the uptake and use of water, minerals, and light.	<ul style="list-style-type: none"> <li>Explain functions of water in plant growth.</li> <li>Explain the absorption and transport systems of plants.</li> <li>Explain the role of light quality on plant growth.</li> <li>Explain the effects of light quality on plant growth.</li> <li>Explain the process of photosynthesis.</li> <li>Analyze factors that affect photosynthesis.</li> </ul>	<ul style="list-style-type: none"> <li>Plant Science Unit</li> <li>Agriscience Textbook               <ul style="list-style-type: none"> <li>Section 5 (Plant Sciences)</li> </ul> </li> </ul>

<b>Indicator #6:</b> Basic economic principles.			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Analysis	ITA6.1 Students will be able to summarize basic economic principles as they relate to production agriculture and agribusiness management.	<ul style="list-style-type: none"> <li>Explain utility.</li> <li>Explain competition.</li> <li>Explain costs and price.</li> <li>Explain supply and demand.</li> <li>Explain macroeconomics and how it affects agriculture.</li> <li>Make recommendations based upon analysis and interpretation of economic information.</li> </ul>	<ul style="list-style-type: none"> <li>Ag Business Management Unit</li> <li>Agriscience Textbook               <ul style="list-style-type: none"> <li>Section 10 (Communications and Management in Agriscience)</li> </ul> </li> </ul>

<b>Indicator #7: Principles and procedures in Food Science Technology.</b>			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Analysis	ITA7.1 Students will be able to summarize basic food science technology principles.	<ul style="list-style-type: none"> <li>• Demonstrate safe food handling practices.</li> <li>• Demonstrate food processing and preservation techniques and procedures.</li> <li>• Analyze marketing and advertising of agricultural products.</li> </ul>	<ul style="list-style-type: none"> <li>• Food Science Unit</li> <li>• Agriscience Textbook               <ul style="list-style-type: none"> <li>○ Section 9 (Food Science and Technology)</li> </ul> </li> </ul>

<b>Indicator #8: Principles of Agricultural Systems Technology.</b>			
<b>Bloom's Taxonomy Level</b>	<b>Standard</b>	<b>Supporting Concepts/Skills</b>	<b>Assessment and Resources</b>
Application	ITA8.1 Students will be able to summarize basic principles involved in agricultural systems technology.	<ul style="list-style-type: none"> <li>• Recommend and demonstrate use of proper tools for given purposes.</li> <li>• Design a bill of materials for a selected project.</li> <li>• Demonstrate safe use of tools and equipment.</li> <li>• Identify and troubleshoot machine systems.</li> <li>• Demonstrate use of operator manuals.</li> </ul>	<ul style="list-style-type: none"> <li>• Shop Safety and Woodworking Unit</li> </ul>