Agriculture, Food & Natural Resources Career Cluster
Basic Agriculture Science
Course Number 02.47100

Course Description:

This course is designed as the foundational course for all Agriculture, Food & Natural Resources Pathways. The course introduces the major areas of scientific agricultural production and research; presents problem solving lessons and introductory skills and knowledge in agricultural science and agri-related technologies. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities. This course is the prerequisite for all AFNR pathways and is intended for students in grades 8-10.

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Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to

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Course Standard 4

AFNR-BAS-4

Recognize how agriculture meets human needs today, in the past, and for the future.

4.1 Explain the three basic human needs and sources for food, clothing, and shelter.
4.2 Define agriculture.
4.3 Identify major agricultural milestones or inventions and analyzes their impact on modern life and agriculture.
4.4 Describe the eight major branches of the agriculture industry.
4.5 Determine
4.6 Differentiate

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8.5 Analyze skills, education requirements, income, and advantages and disadvantages of careers in agriscience/biotechnology fields.

Support of CTAE Foundation Course Standards and Georgia Standards of Excellence
ELACC9-10SL1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9 10 topics, texts, and
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ELACC9-10SL2: Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
ELACC9-10SL4: Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
SCSh3: Students will identify and investigate problems scientifically.

a. Suggest reasonable hypotheses for identified problems.
b. Develop procedures for solving scientific problems.
c. Collect, organize and record appropriate data.
d. Graphically compare and analyze data points and/or summary statistics.
e. Develop reasonable conclusions based on data collected.
f. Evaluate whether conclusions are reasonable by reviewing the process and checking against other available information.

Course Standard 9

AFNR-BAS-9
Define major components of the animal industry and outline the development of the resulting products, services, and careers.

9.1 Analyze the role, importance, and scope of the dairy, beef, pork, poultry, equine, and small ruminant animal industries in modern agriculture.
9.2 Identify and describe major breeds within each livestock segment.
9.3 Explore the importance of alternative livestock in animal agriculture.
9.4 Define key terminology related to animal science and production practices (fact vs. fiction).

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Course Standard 12

AFNR-BAS-12
Apply principles of environmental science as it relates to agricultural production and sustainability.

12.1 Identifies agricultural commodities that can be converted to alternative energy sources.
12.2 Analyzes the efficiency of renewable energy sources such as wind, solar, and biofuels.
12.3 Compares and contrasts current production practices such as organic, naturally raised systems, and conventional agricultural production with regard to their sustainability.
12.4 Demonstrates how intensive production systems such as aquaculture and vertical farming can maximize production while minimizing space requirements.
12.5 Debates how environmental legislation effects agricultural production.
12.6 Analyzes skills, education requirements, income, and advantages and disadvantages of careers in the agricultural environmental science industry.

Support of CTAE Foundation Course Standards and Georgia Standards of Excellence
ELACC9-10SL1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9 10 topics, texts, and

ELACC9-10SL2: Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
SEV4: Students will understand and describe availability, allocation and conservation of energy and other resources.

a. Differentiate between renewable and nonrenewable resources including how different resources are produced, rates of use, renewal rates, and limitations of sources. Distinguish between natural and produced resources.
b. Describe how technology is increasing the efficiency of utilization and accessibility of resources.
c. Describe how energy and other resource utilization impact the environment and recognize that individuals as well as larger entities (businesses, governments, etc.) have impact on energy efficiency.
d. Describe the relationship of energy consumption and the living standards of societies.
e. Describe the commonly used fuels (e.g. fossil fuels, nuclear fuels, etc.) and some alternative fuels (e.g. wind, solar, ethanol, etc.) including the required technology, availability, pollution problems and implementation problems. Recognize the origin of fossil fuels and the problems associated with our dependence on this energy source.
f. Describe the need for informed decision making of resource utilization (i.e. energy and water usage allocation, conservation, food and land, and long-term depletion).

Course Standard 13

AFNR-BAS-13
Explain and demonstrate basic plant science principles including plant health, growth and reproduction.

13.1 Describe basic factors in plant growth.
13.2 Identify plant life cycles and list examples.
13.3 Label the major parts of the plant and explain functions of each plant part.
13.4 Compare and contrast photosynthesis, respiration, and transpiration and state their importance.
13.5 Identify important floriculture and nursery/landscape plants utilized in Georgia.
13.6 Explain the roles of essential plant nutrients for plant growth and reproduction.
13.7 Debate the use of organic and inorganic fertilizers in plant production.

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13.8 Illustrate and demonstrate sexual and asexual methods of various plant propagation techniques.
13.9 Sequence the steps of pollination and fertilization.
13.10 Demonstrate scarification, stratification, and planting seeds.
13.11 Outline germination steps and list conditions under which germination occurs.
13.12 Analyze skills, education requirements, income, and advantages and disadvantages of careers in the plant science industry.

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ELACC9-10SL1: Initiate and participate effectively in a range of collaborative discussions

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