

Introduction to Agriculture, Food, and Natural Resources Scope and Sequence

Unit Lesson

Objectives

NATURE AND SCOPE OF AFNR AND THEIR ROLE IN SOCIETY AND ECONOMY

People and Agriculture

Describe people in relation to the trades of living for survival.

Identify the common impact that agriculture had on major historical wars.

Identify the impact war has had on the agricultural industry.

Describe the history and development of farming.

Project: People, Agriculture, and Society

Advances in Agriculture

Describe tool making and the role it played in early societies.

Examine technological advances and determine their importance to agriculture.

Examine scientific advancements and determine their importance to agriculture.

Today's Agricultural Consumer

Compare and contrast the population trends of the average family of 1913 to 2013.

Examine consumer-spending habits for agricultural and related products.

Propose potential reasons for changes in consumer spending habits on agricultural and related products.

Relate advances and changes in the agricultural industry and beyond to the cost of agricultural products.

Discuss agricultural career clusters and provide examples of related careers for each cluster.

Project: Percent Spent

Sustainable Agriculture

Define sustainable living.

Explain sustainable farming.

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Describe methods of sustainable farming.

Discuss sustainable forest management.

Discuss some alternative sources of energy that can be used in farming.

Project: Research and Learn: The Power of Pool!

Agriculture and the Economy

Discuss the impact of agriculture on the economy.

Identify agricultural commodities.

Discuss tariffs and trade.

Develop a timeline of developments in the agricultural industry during the 20th century.

Project: Research and Learn: Commodities and Exchanges

Food Distribution and Safety

Discuss the channels of food distribution used in the United States.

Discuss the variety of food sources available in the United States.

Identify key agriculture organizations in the United States.

Analyze employment opportunities in AFNR.

Test

AGRICULTURE, FOOD AND NATURAL RESOURCES AND THE ENVIRONMENT

Environment and Ecosystems

Describe a food chain in the context of ecosystems and the environment.

Discuss ecosystems, the environment, and human interaction.

Project: Ecosystems in Your Area

Soil and Water Quality

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Assess some issues with water quality and attribute them to specific causes.

Identify and evaluate the seriousness of some issues with soil degradation and attribute them to specific causes.

Prioritize some threats to water quality and propose two reasonable interventions for each.

AFNR and Population Impact on the Environment

Plot trends in population concentrations and movements influenced by agriculture, natural resource management, and the environment.

Assess some issues with soil degradation and attribute them to specific causes.

Assess the dangers to the environment of unsustainable practices in agriculture and natural resource management.

Discuss ways to mitigate environmental damage arising from practices involving agriculture and natural resources.

Discuss some potential careers in the agricultural and natural resource industry.

Project: Current Event: Sustainable practice in agriculture and natural resources

Agriculture Personnel Support Systems

Identify some important events that made an impact on the agricultural industry.

Compare and contrast agriculture and the environmental research available from our land-grant universities.

Describe some careers in the agricultural industry that relate to environmental quality.

Predict the impact that unsustainable agricultural practices will have on environmental quality.

Green Technologies and Sustainable Agriculture

Propose some ways to farm in a sustainable way.

Provide examples of innovative agricultural techniques that are in use today or might be in use in the future.

Assess sources of alternative energy and describe how they can be used in agriculture.

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Describe some agricultural careers that relate to research and development.

Project: Research and Share: Renewable Energy on the Farm

Environmental Impacts

Compare and contrast the different types of pesticides and their uses.

Describe the dangers of pesticide exposure.

Explain how pesticides are regulated.

Debate the benefits and costs associated with using powerful pesticides.

Project: Case Study: DDT

Test

SAFETY AND HEALTH IN AGRICULTURE, FOOD AND NATURAL RESOURCES SYSTEMS

Risks in Agriculture, Food, and Natural Resources

Explain OSHA and its role in the agricultural industry.

Assess potential hazardous situations in the workplace.

Determine actions that can be taken to minimize risk in the workplace.

Construct a safety plan that addresses potential hazards.

Project: Research and Apply: Writing a Safety Plan

Risk Management in Agriculture, Food, and Natural Resources

Assess a workplace risk and determine some actions that can minimize the risk.

Discuss some actions that are useful in minimizing risks in different situations.

Describe some careers in the agriculture industry that are related to positions in health and safety.

Accident Response and Disaster Planning

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Discuss CPR and AEDs and determine when they are appropriate.

Explain some ways to keep from contracting an infectious disease while helping an injured person.

Assess potential disasters and create an emergency response plan.

Project: Investigate and Write: Disaster Plans

Harvesting and Extracting Natural Resources

Describe some careers related to the natural resource industry.

Differentiate between different types of resources.

Select appropriate safety precautions for different types of mining.

List some government agencies involved in regulating the natural resources industry.

Discuss some environmental impacts of mining.

Natural Resources Conflict and Conservation

Describe how competition for natural resources causes conflict.

Determine the negative environmental impact of some major extraction methods.

Differentiate between conservation and preservation.

Discuss some careers related to natural resource conservation and preservation.

Project: Research and Learn: Natural Resource Conservation

Moving Natural Resources

Compare and contrast safety risks in the different transportation sectors.

Identify the governmental agencies that regulate the different sectors of the transportation industry.

Assess the environmental impacts of the transportation industry and suggest some ways to decrease the negative impacts.

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Describe ways to reduce safety risks.

Define personal protective equipment and discuss its use.

Project: Case Study: The Negative Impacts from the Transportation Industry

Test

INTRODUCTION TO PLANT SCIENCE

What Is Soil?

Explain how soil is formed.

Discuss the process of erosion and how it contributes to soil formation.

List the components of soil.

Identify some nutrients in soils.

Describe the three basic soil types.

Discuss some careers in forestry.

Fertilizers and Amendments

Describe the functions of soil.

Explain the importance of fertilizer.

Identify the components of fertilizer.

Evaluate the quality of soil based on specific components.

Discuss soil structure.

Project: Understanding Fertilizers

Water and Soil

Explain thermal pollution.

Cite examples of water pollution and soil degradation.

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Discuss some causes of soil degradation and water pollution.

Explain desertification.

Give examples of some careers in conservation.

Project: Current Event

What Is a Plant?

Diagram the parts of plants and explain their functions.

Identify how plants take in and give off gases and water.

Determine what plants need to survive.

Cite examples of careers related to plant science.

Project: What Part Is This? Flower Anatomy

Plant Physiology

Explain photosynthesis and its importance.

Discuss food chains and the major roles in a food chain.

Give examples of the roles plants play in society and the economy.

Plant Reproduction, Behavior, and Defenses

Describe some plant defenses.

Explain tropisms.

Explain alternation of generations.

Discuss the importance of plants in life, society, and the economy.

Project: Research and Learn: Plant Reproduction

Test

ANIMAL AGRICULTURE

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Animals in Society

Determine the importance of animal systems in history.

Evaluate animal systems and determine their role in agriculture and society.

Compare the variety and scope of different managed animal systems.

Project: Observe and Learn: Animals in Your Life

Classification and the Breeding of Animals

Compare and contrast the classification of different animals.

Discuss genetics and how it is important in animal systems.

Describe cloning and artificial selection.

Discuss some careers that relate to animals and animal breeding.

Animal Behavior and Health

Describe and give examples of different types of animal behaviors.

Compare and contrast the quality of life for animals in industrial farms vs. animals on free-range farms.

Give examples of diseases that can be passed from animals to humans.

Project: Research and Learn: Zoonotic Disease

Animals and the Environment

Evaluate the environmental impacts of animals.

Discuss and cite examples of the impact of invasive species.

Assess a situation to determine the best livestock-management practice to use in order to minimize environmental damage.

Explain carrying capacity.

Project: Problem Solving: Overgrazing

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Animal Welfare

Compare and contrast animal rights and animal welfare.

Discuss the federal law that relates to animal welfare.

Evaluate a situation and determine whether it is an example of abuse or neglect.

Discuss some factors to consider when choosing an educational program.

Project: Research and Learn: Animal Welfare Laws

Waste Management

Identify some problems with waste management systems.

Discuss alternatives to traditional waste management systems.

Compare traditional systems with methane recapture systems.

Compare and contrast the waste management needs of traditional farms.

Identify ways of preparing for college entry.

Test

COURSE PROJECT, REVIEW, AND EXAM

Review

Exam