

Natural Resources & Conservation/Horticultural Studies  
CASE Curriculum: Level II Unit Outline

**Unit 1: Agenda Book Review/Classroom Rules**

- Class discussion of student agenda book
- Review of classroom rules
- School safety protocols, district drills and emergency evacuations, behavior and meeting locations
- Review expectations and school policies for electronic devices

**Unit 2: Safety, First Aid, Personal Protective Equipment and Shop Attire**

- Identify, discuss, locate first aid and blood borne kits
- Identify, locate and demonstrate function and purpose of the Emergency Eye Station
- Identify, discuss, locate fire extinguisher
- Identify, distribute and discuss function and uses of protective eyewear, appropriate personal protective equipment (PPE) required in shop, and acceptable shop attire
- Identify, show location and discuss function and uses of the SDS (Safety Data Sheets) and how to interpret the information about paints and aerosols, content precautions, material labeling
- Equipment safety protocols
- Identify, demonstrate shop ventilation systems where applicable
- Identify locate and discuss function of shop flammable cabinet where applicable
- Discuss and demonstrate shop housekeeping of supplies, work stations and room maintenance
- Discuss and identify electrical safety considerations in the shop area
- Compile a safety section in the student shop notebook
- Identify, demonstrate air gauge function and operation where applicable
- Completion of online safety course and successful passing of safety test(s)

**Unit 3: Natural Resources and Ecology (NRE): Conservation, Preservation, Exploitation**

- Understand the importance of and implement organized record keeping in the fields of NRE
- Understand that differing perceptions of conservation, preservation and exploitation regarding the use of natural resources influence resource management decisions

**Unit 4: NRE: Mother Earth**

- Understand soil formation factors
- Understand how soil texture and structure influence soil properties and usability
- Know that soil is a natural filter and can collect nutrients and other materials from water

- Know that soil properties directly relate to the development, use and management of soil as a natural resource
- Utilize topographical maps to gain information on the configuration of the surface of the Earth
- Know the influences of land erosion
- Utilize soil surveys as a land use planning tool

#### **Unit 5: NRE: Water Works**

- Know the cycle water takes as it's driven into the atmosphere and returns to the surface
- Know the different forms of water and the different bodies of water and the influencing characteristics
- Understand water quality, how to measure water quality, and the different uses of water determined by its quality
- Know how environmental conditions and human activities influence water quality
- Understand how water movement can alter the quality of water

#### **Unit 6: NRE: Lighter Than Air**

- Understand the various levels in the atmosphere and the differing characteristics
- Understand functions of the atmosphere
- Understand air quality and its determining factors

#### **Unit 7: NRE: Earth's Energy**

- Know that energy and nutrients flow through trophic levels within an ecosystem
- Understand that the geographic area of an ecosystem influences the complexity and type of organisms present
- Know that the availability of required resources determines the carrying capacity of a given species in an ecosystem

#### **Unit 8: NRE: Flora and Fauna**

- Understand that biodiversity refers to the variety of living components in an ecosystem
- Know that plants are scientifically identified using taxonomy and various classification systems
- Understand that vegetation type present in an ecosystem is influenced by the environment and the activity of animals and humans
- Recognize that plant populations shift in response to changes in the environment
- Understand the requirements for wildlife
- Know that organisms require natural processes to adapt to their environment and increase chances of survival
- Know the causes of artificial selection within a population
- Recognize various objectives that influence wildlife management

### **Unit 9: NRE: Farming, Forestry, and Ferrous**

- Know and understand sustainable agriculture practices
- Realize agricultural stewardship balances agriculture productivity and profitability while conserving natural resources
- Understand effective forest management and the necessary techniques
- Understand the positive and negative impacts of mining

### **Unit 10: NRE: We the People**

- Understand how human populations impact the natural environment
- Know the sources of available energy
- Understand how proper waste management is essential and how it impacts society
- Know and understand how recreational activities impact the natural environment and native species
- Understand that recreational use of natural resource areas requires the development of skills to ensure the safety of the individual while protecting the integrity of the natural resource

### **Unit 11: NRE: Past, Present, Future**

- Understand environmental policies and regulations
- Realize that national conservation practices have shifted over time due to changes in environmental perceptions
- Recognize the complex social issue of balancing the needs of humans and maintaining environmental quality

### **Unit 12: Career Exploration and Portfolio II**

- Plan a job search, including preparing the necessary documents
- Describe different types of job orientation and performance evaluations
- Describe leadership skills and strategies for acquiring such skills
- Recognize the importance of professional development and lifelong learning
- Career portfolios
  - Professional requirements
    - Resume
    - Cover letter
    - Attendance for success form
    - Certificates of achievements
    - Three certificates
  - Academic artifacts
    - 24 academic achievements
      - Tests
      - Quizzes

- Projects
- Performance artifacts
  - 24 Practical achievements
    - Labs
    - Practical assignments

Natural Resources & Conservation/Horticultural Studies  
New Jersey Student Learning Standards

**NJ Learning Standards 9.3**

<b>CONTENT AREA:</b>	<b><i>21<sup>st</sup> Century Life and Careers</i></b>
<b>AGRICULTURE, FOOD &amp; NATURAL RESOURCES CAREER CLUSTER®</b>	
<b>Number</b>	<b>Standard Statement</b>
<i>By the end of Grade 12, Career and Technical Education Program completers will be able to:</i>	
<b>CAREER CLUSTER®:</b>	<b><i>AGRICULTURE, FOOD &amp; NATURAL RESOURCES (AG)</i></b>
<b>PATHWAY:</b>	<b><i>PLANT SYSTEMS (AG-PL)</i></b>
<b>9.3.12.AG-PL.1</b>	<b>Develop and implement a crop management plan for a given production goal that accounts for environmental factors.</b>
<b>9.3.12.AG-PL.2</b>	<b>Apply the principles of classification, plant anatomy and plant physiology to plant production and management.</b>
<b>9.3.12.AG-PL.3</b>	<b>Propagate, culture and harvest plants and plant products based on current industry standards.</b>
<b>9.3.12.AG-PL.4</b>	<b>Apply principles of design in plant systems to enhance an environment (e.g., floral, forest, landscape and farm).</b>