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| **Framework Title: Environmental Service Systems (ESS)** | | | | | |
| **CIP Code: 030103, 030198** | | | **Total Framework Hours up to:** | | |
| **Course: Environmental Systems Level 1,2, and 3** | | | **Exploratory Preparatory** | | |
| **Career Cluster: AFNR Cluster Pathway: Environmental Service Systems (ESS) Date Last Modified:** | | | | | |
| **Pathway Content Standard:** | | | | | |
| **Performance Assessments** | | | | | |
| *SAE.01. This course will include instruction in and Student involvement in Supervised Agriculture Experience Projects (SAE).* | | | | | |
| ***STANDARDS AND PERFORMANCE INDICATORS*** | | | | | |
| **Performance Indicator: SAE.01.01. The Students will establish and conduct Supervised Agriculture Experience Projects (SAE) as an integral part of an Agriculture Education program. This information is taught at the beginning of the course. Total Learning Hours: 5 to 10 hours** | | | | | |
| **Level I=Basic Level II=Core Level III=Advanced** | | | | Standards | |
| **Level I, II, III** | **Performance Indicators** | | | |  |
| **SAE.01.01.a.** | | Explain the history of SAE. | | |  |
| **SAE.01.01.b.** | | Explain the benefits of SAE projects to skill development, leadership and career success. | | |  |
| **SAE.01.01.c.** | | Explain the connection between SAE and FFA. | | |  |
| **SAE.01.01.d.** | | Explain the five types of SAE. (Entrepreneurship, Placement, Research, Exploratory, Improvement) | | |  |
| **SAE.01.01.e.** | | Explore ideas for SAE projects. | | |  |
| **SAE.01.01.f.** | | Explain how SAE projects support academic achievement. | | |  |
| **SAE.01.01.g.** | | Select and establish an SAE project. | | |  |
| **SAE.01.01.h.** | | Explain and keep records on established SAE projects. | | | |
| **SAE.01.01.i.** | | Explain SAE project Supervision, visitation and assessment. | | | |
| **SAE.01.01.j.** | | Explain how SAE projects benefit the community. | | | |
| **SAE.01.01.k.** | | Seek recognition for SAE project accomplishments. | | | |
| **SAE.01.01.l.** | | Explain the three circle concept for SAE, FFA Leadership, and Classroom/Laboratory in an Agriculture Education program. | | | |

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| **Performance Element Assessed:** | | | | | | | |
| **ESS.01. Performance Element: Use analytical procedures to plan and evaluate environmental service systems.** | | | | | | | |
| ***PERFORMANCE INDICATOR(S)*** | | | | | | | |
| **ESS.01.01. Performance Indicator:** Analyze and interpret samples. **1A, 1B, 4A, 5B, and A2** | | | | | | | |
| **Number Performance: Level I=Basic Level II=Core Level III=Advanced** | | | | | | | Standard # |
| **ESS.01.01.01.a.** | | Identify sample types and sampling techniques, explain the importance of unbiased sampling and collect samples. Level I | | | | |  |
| **ESS.01.01.01.b.** | | Determine the appropriate sampling techniques needed to generate statistical analysis data, and prepare valid chemical laboratory samples according to instructions. Level II | | | | |  |
| **ESS.01.01.01.c.** | | Analyze and interpret results of sample measurements. Level III | | | | |  |
| **ESS.01.01.02.a.** | | Identify basic laboratory equipment and environmental monitoring instruments and explain their uses. Level I | | | | |  |
| **ESS.01.01.02.b.** | | Demonstrate the proper use and maintenance of basic laboratory equipment and environmental monitoring instruments. Level II | | | | |  |
| **ESS.01.01.02.c.** | | Calibrate and use laboratory and field equipment and instruments according to standard operating procedures. Level III | | | | |  |
| **Social Studies - Civics** | | | | | | | |
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| **Writing** | | | | | | | |
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| **Art** | | | | | | | |
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| **Science Standards** | | | | | | | |
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| **Mathematics Standards** | | | | | | | |
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| ***SKILLS*** | | | | | | | |
| **Leadership:** | | | | | | | |
| **Employability:** | | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision | |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | | |

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| **Performance Element Assessed:** | | | | | | | |
| **ESS.02. Performance Element: Assess the impact of policies and regulations on environmental service systems.** | | | | | | | |
| ***PERFORMANCE INDICATOR(S)*** | | | | | | | |
| **ESS.02.01. Performance Indicator:** Interpret laws affecting environmental service systems. **Sc F4, LA 1&8, and SS 10C** | | | | | | | |
| **Number Performance: Level I=Basic Level II=Core Level III=Advanced** | | | | | | | Standard # |
| **ESS.02.01.01.a.** | | Identify laws associated with environmental service systems. Level I | | | | |  |
| **ESS.02.01.01.b.** | | Identify the purposes of laws associated with environmental service systems. Level II | | | | |  |
| **ESS.02.01.01.c.** | | Abide by the specific laws pertaining to environmental service systems. Level III | | | | |  |
| **Social Studies - Civics** | | | | | | | |
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| **Writing** | | | | | | | |
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| **Art** | | | | | | | |
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| **Science Standards** | | | | | | | |
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| **Mathematics Standards** | | | | | | | |
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| ***SKILLS*** | | | | | | | |
| **Leadership:** | | | | | | | |
| **Employability:** | | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision | |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | | |

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| **Performance Element Assessed:** | | | | | | | |
| **ESS.03. Performance Element: Apply scientific principles to environmental service systems.** | | | | | | | |
| ***PERFORMANCE INDICATOR(S)*** | | | | | | | |
| **ESS.03.01. Performance Indicator:** Apply meteorology principles to environmental service systems. **Sc D2 and F4, LA 8, and SS 3C**  **ESS.03.02. Performance Indicator:** Apply soil science principles to environmental service systems. **Sc B2 and D2, SS 3K**  **ESS.03.03. Performance Indicator:** Apply hydrology principles to environmental service systems. **Sc D2**  **ESS.03.04. Performance Indicator:** Apply best management techniques associated with the properties, classifications and functions of wetlands. **Sc C4 and F3, SS 3C**  **ESS.03.05. Performance Indicator:** Apply chemistry principles to environmental service systems. **Sc B2, B3, and F4**  **ESS.03.06. Performance Indicator:** Apply microbiology principles to environmental service systems. **Sc A2, C1, and F1** | | | | | | | |
| **Number Performance: Level I=Basic Level II=Core Level III=Advanced** | | | | | | | Standard # |
| **ESS.03.01.01.a.** | | Identify components and structural layers of the earth’s atmosphere. Level I | | | | |  |
| **ESS.03.01.01.b.** | | Differentiate the types of weather systems and weather patterns. Level II | | | | |  |
| **ESS.03.01.01.c.** | | Monitor meteorological conditions and accurately record and document the data. Level III | | | | |  |
| **ESS.03.01.02.a.** | | Explain how meteorological conditions influence air quality. Level I | | | | |  |
| **ESS.03.01.02.b.** | | Illustrate the formation of acid precipitation and explain its impact on the environment. Level II | | | | |  |
| **ESS.03.01.02.c.** | | Monitor air quality and accurately record and document the data. Level III | | | | |  |
| **ESS.03.01.03.a.** | | Explain climate change and recognize signs of climate change. Level I | | | | |  |
| **ESS.03.01.03.b.** | | Prepare a report on the environmental consequences of climate change. Level II | | | | |  |
| **ESS.03.01.03.c.** | | Evaluate the predicted impacts of global climate change on environmental service systems. Level III | | | | |  |
| **ESS.03.01.04.a.** | | Explain the earth’s balance of energy. Level I | | | | |  |
| **ESS.03.01.04.b.** | | Explain the basics of the greenhouse effect and describe how the greenhouse effect alters the earth’s balance of energy. Level II | | | | |  |
| **ESS.03.01.04.c.** | | Explain processes that contribute to the change in levels of greenhouse gases. Level III | | | | |  |
| **ESS.03.02.01.a.** | | Explain the process of soil formation through weathering. Level I | | | | |  |
| **ESS.03.02.01.b.** | | Differentiate rock types and relate the chemical composition of mineral matter in soils to the parent material. Level II | | | | |  |
| **ESS.03.02.01.c.** | | Apply knowledge of soil orders to environmental service systems. Level III | | | | |  |
| **ESS.03.02.02.a.** | | Describe the biodiversity found in soil and the contribution of biodiversity to the physical and chemical characteristics of soil. Level I | | | | |  |
| **ESS.03.02.02.b.** | | Relate the activities of microorganisms in soil to environmental service systems. Level II | | | | |  |
| **ESS.03.02.02.c.** | | Evaluate the uses of soil microorganisms in environmental service systems. Level III | | | | |  |
| **ESS.03.02.03.a.** | | Explain how the physical qualities of the soil influence the infiltration and percolation of water. Level I | | | | |  |
| **ESS.03.02.03.b.** | | Identify the physical qualities of the soil that determine its use for environmental service systems. Level II | | | | |  |
| **ESS.03.02.03.c.** | | Conduct tests of soil to determine its use for environmental service systems. Level III | | | | |  |
| **ESS.03.02.04.a.** | | Identify land uses, capability factors and land capability classes. Level I | | | | |  |
| **ESS.03.02.04.b.** | | Use a soil survey to determine the land capability classes for different parcels of land in an area. Level II | | | | |  |
| **ESS.03.02.04.c.** | | Design a master land-use management plan for a given area. Level III | | | | |  |
| **ESS.03.03.01.a.** | | Describe the world’s water supplies and discuss the many uses of water. Level I | | | | |  |
| **ESS.03.03.01.b.** | | Describe characteristics of water that influence the biosphere and sustain life. Level II | | | | |  |
| **ESS.03.03.01.c.** | | Research and debate one or more current environmental issues associated with the supplies of groundwater and surface water. Level III | | | | |  |
| **ESS.03.03.02.a.** | | Demonstrate knowledge of hydrogeology by differentiating between groundwater and surface water. Level I | | | | |  |
| **ESS.03.03.02.b.** | | Describe interactions between groundwater and surface water. Level II | | | | |  |
| **ESS.03.03.02.c.** | | Use groundwater-flow equations and Darcy’s Law to explain how geology and meteorology affect groundwater and groundwater flow. Level III | | | | |  |
| **ESS.03.03.03.a.** | | Define groundwater potential. Level I | | | | |  |
| **ESS.03.03.03.b.** | | Identify differences in groundwater potential. Level II | | | | |  |
| **ESS.03.03.03.c.** | | Delineate groundwater potential zones. Level III | | | | |  |
| **ESS.03.03.04.a.** | | Identify environmental hazards associated with groundwater supplies. Level I | | | | |  |
| **ESS.03.03.04.b.** | | Describe precautions taken to prevent/reduce contamination of groundwater supplies. Level II | | | | |  |
| **ESS.03.03.04.c.** | | Test and document the quality of groundwater supplies. Level III | | | | |  |
| **ESS.03.03.05.a.** | | Discuss factors that influence the velocity of water through an open channel. Level I | | | | |  |
| **ESS.03.03.05.b.** | | Explain how the velocity of water influences channel morphology and stream processes. Level II | | | | |  |
| **ESS.03.03.05.c.** | | Measure and document water flow through an open channel and interpret channel-flow analysis. Level III | | | | |  |
| **ESS.03.03.06.a.** | | Identify the operational components of a pumping or fluid movement system. Level I | | | | |  |
| **ESS.03.03.06.b.** | | Discuss design principles related to hydraulic systems and highflow technologies related to fluid movement. Level II | | | | |  |
| **ESS.03.03.06.c.** | | Install and maintain pumps and associated delivery systems. Level III | | | | |  |
| **ESS.03.04.01.a.** | | Describe the functions of wetlands and differentiate types of wetlands. Level I | | | | |  |
| **ESS.03.04.01.b.** | | Explain the criteria for classifying wetlands. Level II | | | | |  |
| **ESS.03.04.01.c.** | | Apply the Hydrogeomorphic (HGM) Approach and National Wetland Inventories (NWI) to determine the classifications for local wetlands. Level III | | | | |  |
| **ESS.03.04.02.a.** | | Identify the major types of living organisms that inhabit wetlands. Level I | | | | |  |
| **ESS.03.04.02.b.** | | Identify the predominant species in a local wetland. Level II | | | | |  |
| **ESS.03.04.02.c.** | | Conduct a survey of the predominant species in a local wetland. Level III | | | | |  |
| **ESS.03.04.03.a.** | | Explain the importance of wetland management, creation, enhancement and restoration programs. Level I | | | | |  |
| **ESS.03.04.03.b.** | | Identify techniques used in wetland management, creation, enhancement and restoration programs. Level II | | | | |  |
| **ESS.03.04.03.c.** | | Evaluate and document the condition of a local wetland and apply techniques to manage, create, enhance and/or restore local wetlands. Level III | | | | |  |
| **ESS.03.05.01.a.** | | Explain basic chemistry principles. Level I | | | | |  |
| **ESS.03.05.01.b.** | | Distinguish the characteristics of inorganic and organic compounds as they relate to environmental service systems. Level II | | | | |  |
| **ESS.03.05.01.c.** | | Apply standard operating procedures for use of chemicals in environmental service systems. Level III | | | | |  |
| **ESS.03.06.01.a.** | | Identify the basic structures of microorganisms and the major groups of microorganisms. Level I | | | | |  |
| **ESS.03.06.01.b.** | | Describe microbial growth in the environment and analyze the influence of environmental factors on microbial growth. Level II | | | | |  |
| **ESS.03.06.01.c.** | | Collect, culture and examine microorganisms, following safety procedures. Level III | | | | |  |
| **ESS.03.06.02.a.** | | Define the purposes of bioassay tests. Level I | | | | |  |
| **ESS.03.06.02.b.** | | Outline procedures for a bioassay test. Level II | | | | |  |
| **ESS.03.06.02.c.** | | Conduct bioassay tests related to environmental service systems and interpret results. Level III | | | | |  |
| **Social Studies - Civics** | | | | | | | |
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| **Writing** | | | | | | | |
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| **Art** | | | | | | | |
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| **Science Standards** | | | | | | | |
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| **Mathematics Standards** | | | | | | | |
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| ***SKILLS*** | | | | | | | |
| **Leadership:** | | | | | | | |
| **Employability:** | | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision | |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | | |

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| **Performance Element Assessed:** | | | | | | | |
| **ESS.04. Performance Element: Operate environmental service systems to manage a facility environment.** | | | | | | | |
| ***PERFORMANCE INDICATOR(S)*** | | | | | | | |
| **ESS.04.01. Performance Indicator:** Use pollution control measures to maintain a safe facility environment. **Sc F5 and F5**  **ESS.04.02. Performance Indicator:** Manage safe disposal of all categories of solid waste. **Sc F1, F4, and F5**  **ESS.04.03. Performance Indicator:** Apply the principles of public drinking water treatment operations to ensure safe water at a facility. **Sc F3 and F5**  **ESS.04.04. Performance Indicator:** Apply principles of wastewater treatment to manage wastewater disposal in keeping with rules and regulations. **Sc F4 and F5**  **ESS.04.05. Performance Indicator:** Manage hazardous materials to assure a safe facility and to comply with applicable regulations. **Sc F4 and F5** | | | | | | | |
| **Number Performance: Level I=Basic Level II=Core Level III=Advanced** | | | | | | | Standard # |
| **ESS.04.01.01.a.** | | Identify types of pollution and distinguish between point source and nonpoint source pollution. Level I | | | | |  |
| **ESS.04.01.01.b.** | | Give examples of how industrial and nonindustrial pollution has damaged the environment. Level II | | | | |  |
| **ESS.04.01.01.c.** | | Survey the local area for evidence of industrial and nonindustrial pollution. Level III | | | | |  |
| **ESS.04.01.02.a.** | | Describe ways in which pollution can be managed and prevented. Level I | | | | |  |
| **ESS.04.01.02.b.** | | Conduct tests to determine the presence and extent of pollution. Level II | | | | |  |
| **ESS.04.01.02.c.** | | Plan and develop a pollution remediation, management or prevention program. Level III | | | | |  |
| **ESS.04.02.01.a.** | | Describe different types of solid waste. Level I | | | | |  |
| **ESS.04.02.01.b.** | | Evaluate environmental hazards created by different types of solid waste, solid waste accumulation and solid waste disposal. Level II | | | | |  |
| **ESS.04.02.01.c.** | | Analyze environmental hazards associated with the identification and acceptance of solid waste disposal sites. Level III | | | | |  |
| **ESS.04.02.02.a.** | | Discuss practical management options for treating solid waste. Level I | | | | |  |
| **ESS.04.02.02.b.** | | Identify characteristics of solid waste treatment and recognize the byproducts of solid waste treatment. Level II | | | | |  |
| **ESS.04.02.02.c.** | | Collect and treat solid waste materials. Level III | | | | |  |
| **ESS.04.02.03.a.** | | Define sanitary landfill. Level I | | | | |  |
| **ESS.04.02.03.b.** | | Explain basic sanitary landfill operating procedures and design. Level II | | | | |  |
| **ESS.04.02.03.c.** | | Evaluate sanitary landfill procedures. Level III | | | | |  |
| **ESS.04.02.04.a.** | | Define compost and composting. Level I | | | | |  |
| **ESS.04.02.04.b.** | | Explain scientific principles related to composting. Level II | | | | |  |
| **ESS.04.02.04.c.** | | Evaluate methods of operating a composting facility. Level III | | | | |  |
| **ESS.04.02.05.a.** | | Explain the basic concepts associated with solid waste incineration. Level I | | | | |  |
| **ESS.04.02.05.b.** | | Describe the environmental impact of solid waste incineration. Level II | | | | |  |
| **ESS.04.02.05.c.** | | Evaluate methods of incinerating solid waste, including those used in waste-to-energy plants. Level III | | | | |  |
| **ESS.04.02.06.a.** | | Explain the importance of recycling. Level I | | | | |  |
| **ESS.04.02.06.b.** | | Describe recycling methods and identify materials that can be recycled. Level II | | | | |  |
| **ESS.04.02.06.c.** | | Survey and evaluate local recycling programs and procedures. Level III | | | | |  |
| **ESS.04.03.01.a.** | | Identify chemical and physical properties of drinking water. Level I | | | | |  |
| **ESS.04.03.01.b.** | | Illustrate the steps in the public drinking water treatment process. Level II | | | | |  |
| **ESS.04.03.01.c.** | | Demonstrate the use of water-testing instruments and water-treatment equipment for processing public drinking water. Level III | | | | |  |
| **ESS.04.03.02.a.** | | Define source water quality. Level I | | | | |  |
| **ESS.04.03.02.b.** | | Define source water assessment steps. Level II | | | | |  |
| **ESS.04.03.02.c.** | | Conduct and interpret source water assessments. Level III | | | | |  |
| **ESS.04.04.01.a.** | | Define wastewater. Level I | | | | |  |
| **ESS.04.04.01.b.** | | Diagram the steps in wastewater treatment. Level II | | | | |  |
| **ESS.04.04.01.c.** | | Demonstrate the use of water-testing instruments and water-treatment equipment to treat wastewater. Level III | | | | |  |
| **ESS.04.05.01.a.** | | Identify types of hazardous materials. Level I | | | | |  |
| **ESS.04.05.01.b.** | | Describe risks related to hazardous materials and describe health and safety practices to reduce risks from hazardous materials. Level II | | | | |  |
| **ESS.04.05.01.c.** | | Describe the procedures for the treatment and disposal of hazardous materials and hazardous waste. Level III | | | | |  |
| **Social Studies - Civics** | | | | | | | |
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| **Writing** | | | | | | | |
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| **Art** | | | | | | | |
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| **Science Standards** | | | | | | | |
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| **Mathematics Standards** | | | | | | | |
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| ***SKILLS*** | | | | | | | |
| **Leadership:** | | | | | | | |
| **Employability:** | | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision | |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | | |

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| **Performance Element Assessed:** | | | | | | | |
| **ESS.05. Performance Element: Examine the relationships between energy sources and environmental service systems.** | | | | | | | |
| ***PERFORMANCE INDICATOR(S)*** | | | | | | | |
| **ESS.05.01. Performance Indicator:** Compare and contrast the impact of conventional and alternative energy sources on the environment. **Sc B6, D1, and F3** | | | | | | | |
| **Number Performance: Level I=Basic Level II=Core Level III=Advanced** | | | | | | | Standard # |
| **ESS.05.01.01.a.** | | Identify conventional energy sources and list conservation measures to reduce energy consumption. Level I | | | | |  |
| **ESS.05.01.01.b.** | | Identify advantages and disadvantages to conventional energy sources. Level II | | | | |  |
| **ESS.05.01.01.c.** | | Evaluate the impact the burning of fossil fuels has on the environment. Level III | | | | |  |
| **ESS.05.01.02.a.** | | Identify alternative energy sources. Level I | | | | |  |
| **ESS.05.01.02.b.** | | Identify advantages and disadvantages to alternative energy sources. Level II | | | | |  |
| **ESS.05.01.02.c.** | | Evaluate the impact of alternative energy sources on the environment. Level III | | | | |  |
| **Social Studies - Civics** | | | | | | | |
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| **Writing** | | | | | | | |
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| **Art** | | | | | | | |
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| **Science Standards** | | | | | | | |
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| **Mathematics Standards** | | | | | | | |
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| ***SKILLS*** | | | | | | | |
| **Leadership:** | | | | | | | |
| **Employability:** | | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision | |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | | |

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| **Performance Element Assessed:** | | | | | | | |
| **ESS.06. Performance Element: Use tools, equipment, machinery and technology to accomplish tasks in environmental service systems.** | | | | | | | |
| ***PERFORMANCE INDICATOR(S)*** | | | | | | | |
| **ESS.06.01. Performance Indicator:** Use technological and mathematical tools to map land, facilities and infrastructure. **Sc A3, SS 3C, and 3E**  **ESS.06.02. Performance Indicator:** Maintain tools, equipment and machinery in safe working order for tasks in environmental service systems. | | | | | | | |
| **Number Performance: Level I=Basic Level II=Core Level III=Advanced** | | | | | | | Standard # |
| **ESS.06.01.01.a.** | | Explain the importance of surveying and mapping for environmental service systems. Level I | | | | |  |
| **ESS.06.01.01.b.** | | Explain surveying and mapping principles and identify and explain the use of equipment for surveying and mapping. Level II | | | | |  |
| **ESS.06.01.01.c.** | | Demonstrate surveying and cartographic skills to make site measurements and map facility accesses and infrastructure. Level III | | | | |  |
| **ESS.06.02.01.a.** | | Demonstrate proper use and maintenance of hand tools. Level I | | | | |  |
| **ESS.06.02.01.b.** | | Operate equipment and machinery in accordance with manufacturers’ instructions and OSHA standards, specifically addressing personal protective equipment and proper machine guarding. Level II | | | | |  |
| **ESS.06.02.01.c.** | | Demonstrate proper preventive maintenance techniques and set up a mock preventive maintenance schedule. Level III | | | | |  |
| **Social Studies - Civics** | | | | | | | |
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| **Writing** | | | | | | | |
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| **Art** | | | | | | | |
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| **Science Standards** | | | | | | | |
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| **Mathematics Standards** | | | | | | | |
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| ***SKILLS*** | | | | | | | |
| **Leadership:** | | | | | | | |
| **Employability:** | | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision | |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | | |

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| **Performance Assessments** | | | | | | |
| *To be completed by district* | | | | | | |
| ***STANDARDS AND PERFORMANCE INDICATORS*** | | | | | | |
| **Performance Indicator: Total Learning Hours for Standard:** | | | | | | |
| **Level II=Core Level III=Advanced** | | | | | | |
| **Level II** | | **Performance Indicator Description** | | | | |
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| **Level III** | |  | | | | |
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| ***EALRs, GLEs, Math and Science Standards (Taught & Assessed in Standards)***  ***(Samples included below of GLEs, EALRS, Math and Science Standards must be modified for district frameworks)*** | | | | | | |
| **Reading** | | | | | | |
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| **Communications** | | | | | | |
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| **Social Studies - Civics** | | | | | | |
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| **Writing** | | | | | | |
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| **Art** | | | | | | |
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| **Science Standards** | | | | | | |
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| **Mathematics Standards** | | | | | | |
|  |  | | | | | |
| ***SKILLS*** | | | | | | |
| **Leadership:** | | | | | | |
| **Employability:** | | | | | | |
| **Analytical, Logical & Creative Thinking (check those that students will demonstrate in this lesson):** | | | | | | |
| Observe  Patterns  Sequence  Classify  Compare/Contrast  Predict | | | Cause/Effect  Fact/Opinion  Main Idea  Summary  Point of View  Analysis | Finding Evidence  Evaluation  Detect Bias  Inference  Conclusion  Metacognition | Reasoning  Problem Solving  Goal Setting  Fluency  Elaboration  Flexibility | Originality  Risking  Inquisitiveness  Attending  Persistence  Precision |
| **Relevance to Work:** Understanding that a strong work ethic will contribute to higher productivity in organizations. | | | | | | |