NATURAL RESOURCES AND WILDLIFE MANAGEMENT

JUNIOR & SENIOR INSTRUCTION

Career & Technical Education

Skills for Employment & Lifelong Learning

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Carson City, NV 89701

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University of Nevada, Las Vegas Center for Workforce Development and Research Staff:

Dr. Sterling Saddler, Executive Director, Associate Professor
Dr. Cliff McClain, Associate Professor
Dr. Cecilia Maldonado, Assistant Professor
Melissa Scott, Director of Projects and Operations
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Agriculture Education Instructors:

Writing Team
Gary Sundseth, Facilitator, Great Basin College, Elko
Ron Espell, Barrick Goldstrike Mines, Inc., Elko
Leslie Zimmerman, Eureka High School, Eureka
Gary Back, SRK Consulting, Elko
Randi Hunewill, Smith Valley High School, Smith
Dennis Digenan, Spring Creek High School, Spring Creek
Jim Barbee, Agriculture Consultant, Nevada Department of Education

Review Team
Aaron Albisu, Spring Creek High School, Spring Creek
Dennis Digenan, Spring Creek High School, Spring Creek
Courtney Dahl, Churchill County High School, Fallon
Rebecca Tipton, Albert Lowry High School, Winnemucca
Darryl Grove, Churchill County High School, Fallon
Tedd Heggie, White Pine County High School, Ely
Judy Hellwinkel, Churchill County High School, Fallon
Jared Hyatt, Douglas High School, Minden
Randi Hunewill, Smith Valley High School, Smith
Curtis Jordan, Superintendent, Esmeralda County School District
Bill Laird, Pershing County High School, Lovelock
Leslie Zimmerman, Eureka County High School, Eureka
Jennifer Bieroth, Owyhee High School, Mountain City
Don Metzger, Elko County High School, Elko
Gary Wood, Pahranagat Valley High School, Alamo
Gary Sundseth, Great Basin College, Elko

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Gary Aldax, Sierra Pacific Energy Corporation, Reno
Jim R. Barbee, Agriculture Education Consultant, Dept. of Education
Heather Dye, Executive Director, Nevada FFA Foundation

AGRICULTURE AND NATURAL RESOURCES
Program Requirements

Occupations associated with agriculture production, natural resources, processing and distribution of food and fiber are important to the national interests and provide significant employment opportunities. Occupational education and training in agriculture and agri-business are essential to the continued economic health of Nevada and the nation, as it provides the needed competent and trained work force.

> The advent of corporate agriculture and decline of the family-operated agriculture venture mandate the maintenance, expansion and improvement of occupational agriculture education. Through agriculture education, students are prepared for employment in the field of agriculture through planning and managing agriculture, food, fiber, and natural resources systems. Production of agricultural commodities, including food fiber, wood products, horticultural crops, and other plant and animal products. Financing, processing, and marketing and distribution of agriculture products; farm production and supply and service industries; horticulture and landscaping services, and the use and conservation of land and water resources; development and maintenance of recreational resources. It also includes mining and extraction operations and related environmental management services. Source: *USDOE/OVAE Brochure*

Agriculture education provides high school students with technical and specialized knowledge in production agriculture and natural resources as well as other specific agriculture occupations. The programs are designed to meet students' occupational objectives, interests, and abilities for entry into chosen occupations and can prepare them for advanced education and training. Agriculture education is a coordinated program of group and individual instructional activities consisting of classroom instruction, laboratory experiences, and leadership development. Integral to these activities are FFA (leadership development) and Supervised Agriculture Experience (work-based learning), Nevada Revised Statute 385.110. Federal/Public Law #105-225 which was passed in August, 1998, states "Congress of the United States, recognizes the importance of the FFA as an integral part of the program of Vocational Agriculture." All students enrolled in Agriculture Education will be recognized as members of the FFA organization. All secondary agriculture education programs and school districts will purchase a curriculum packet consisting of the New Horizons agriculture career and technical magazine, the FFA manual, and the Nevada Record Book on a yearly basis for every student enrolled in agriculture education in their program. Areas of study at the secondary level are divided into Agriculture Science and Specialized Advanced Agriculture Career and Technical Areas.

Agriculture and Society, Plant and Soil Science, Agriculture Mechanical Engineering and Technology, Animal Science, Leadership/FFA, Agriculture Business, Sales, Marketing and Supervised Agriculture Experience, Natural Resources, and Employability are included in the Agriculture Science introduction division.

Instruction in business/specialized agriculture provides training in specific occupational skills, duties, and tasks, as determined by the business and industry needs. Specialized career and technical agriculture programs will include, but are not limited to, the following: ornamental horticulture, floriculture, floral design, turf and landscape management, equine science and technology, forestry technology, wildlife management and enforcement, food science and processing, feedlot management, animal science, veterinary science, agriculture power systems, natural resources and reclamation, mining science and operations, nursery and greenhouse management, landscape architecture, irrigation and chemical management, lawn care and maintenance, and agriculture construction.

NEVADA
AGRICULTURE EDUCATION
Model of Instruction

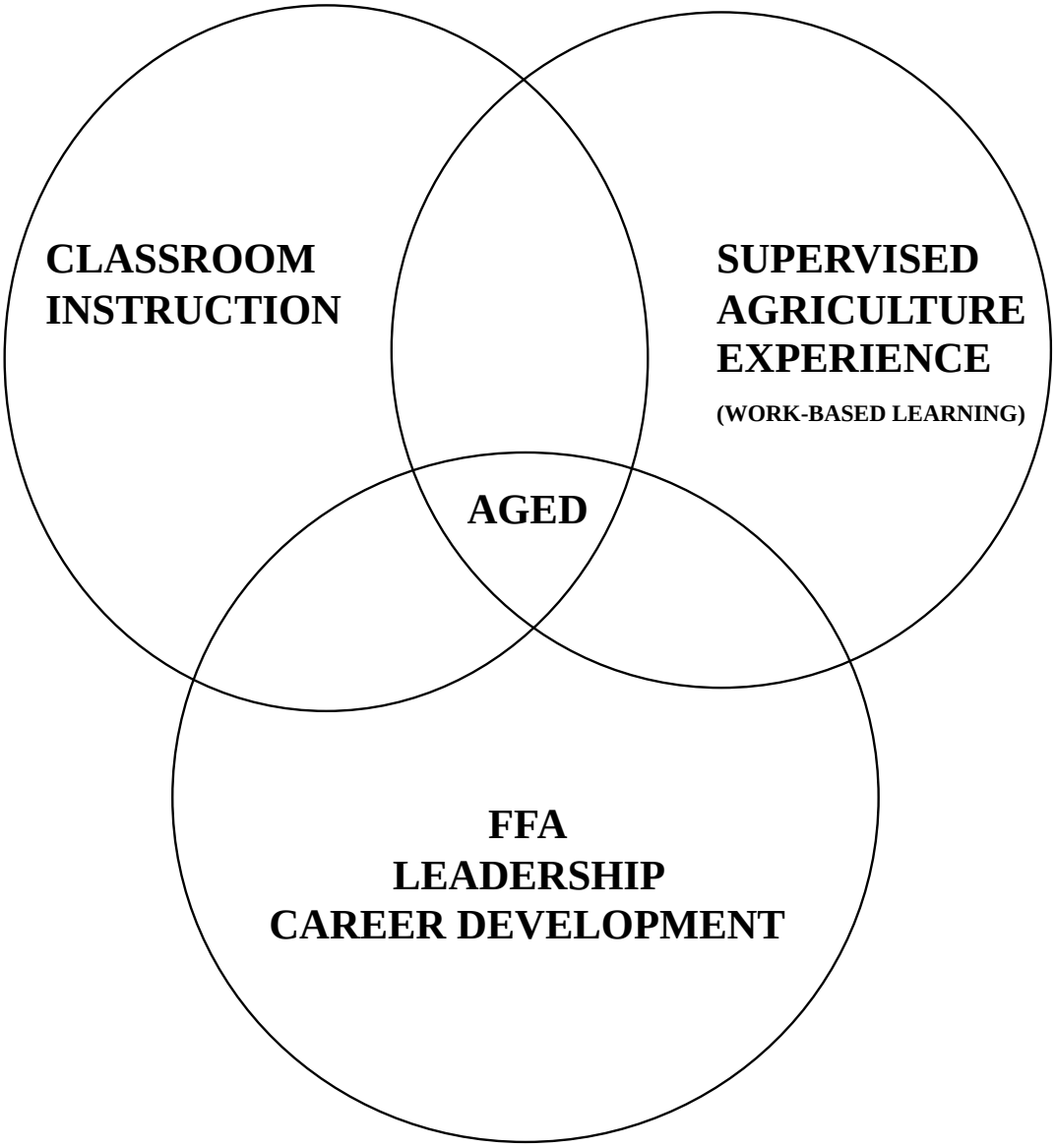

Table of Contents

Soil Science....8
Hydrology....11
Air Quality....15
Energy Resources....17
Mineral Resources....19
Vegetation Resources....22
Range Management....26
Forest Ecology....32
Fish and Wildlife Ecology....33
Fire Ecology....38
Outdoor Recreation....40
Outdoor Safety....41
GPS/GIS....42
Employability Standard....43
Academic Crosswalk....52

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 1.0</u>: Students will understand soil science as it relates to natural resources.

Performance Standard 1.1	**Students will be able to identify the characteristics of soil.**
EXCEEDS STANDARD	• Perform and analyze a soils test. • Visually and physically identify soil types. • Develop soil enhancement strategies. • Recognize the relationship between vegetation and soil types. • Participate in the state's soil contest.
MEETS STANDARD	1.1.1 Explore soil formation factors. 1.1.2 Examine physical characteristics of soil. 1.1.3 Examine chemical and biological characteristics. 1.1.4 Diagram soil profiles. 1.1.5 Determine soil classification. 1.1.6 Investigate soil taxonomy. 1.1.7 Explore soil type distribution.
APPROACHES STANDARD	• List different soil types. • List the parts of soil.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0, 6.0, 7.0, 7.15.6, 9.0
Science: 2.0, 10.0
English Language Arts: 2.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 1.0</u>: Students will understand soil science as it relates to natural resources.

Performance Standard 1.2	**Students will explore the chemical and biological interactions of soil.**
EXCEEDS STANDARD	• Research soil amendments to enhance soil productivity. • Prescribe the use of nitrogen-fixing vegetation.
MEETS STANDARD	1.2.1 Investigate the chemical relationship of soil nutrients and plant growth. 1.2.2 Investigate the micro/macro nutrients of soil. 1.2.3 Recognize the biological components of soil.
APPROACHES STANDARD	• List micro/macro soil nutrients. • Discuss the biological components of soil.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0, 6.0, 7.0, 9.0
Science: 2.0, 3.0, 4.0, 6.0, 13.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 1.0</u>: Students will understand soil science as it relates to natural resources.

Performance Standard 1.3	**Students will develop an appreciation for soil conservation.**
EXCEEDS STANDARD	• Collect soil samples and use appropriate tests in assessing soil condition. • Explain the process of soil renewal. • Develop a soil conservation plan. • Interpret the historical impact of soil management practices.
MEETS STANDARD	1.3.1 Describe how soil is lost and damaged. 1.3.2 Describe the meaning and importance of wetlands. 1.3.3 Describe practices to prevent soil loss. 1.3.4 Classify important soil amendments and describe the role of each. 1.3.5 Compare and contrast examples of soil conservation practices in urban areas, agriculture, mining and other natural resource environments. 1.3.6 Examine historic soil impact within communities.
APPROACHES STANDARD	• List examples of soil conservation practices in urban areas, agriculture, mining, and other natural resource environments. • List types of soil loss and degradation. • Name three congressional acts relating to soils.

Nevada Academic Standards Correlation:
Science: 1.0, 10.0, 12.0, 15.0, 16.0, 18.0, 19.0
English Language Arts: 1.0, 4.0, 11.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 2.0</u>: Students will understand hydrology as it relates to natural resources.

Performance Standard 2.1	**Students will examine the sources and distribution of water resources.**
EXCEEDS STANDARD	• Assess the use of water in Nevada. • Compare water consumption patterns verses water source and distribution.
MEETS STANDARD	2.1.1 Determine the distribution of water on earth. 2.1.2 Identify sources of ground water and surface water. 2.1.3 Illustrate the sources and distributions of surface water in Nevada. 2.1.4 Explore natural and man-made water storage. 2.1.5 Identify practices to conserve and protect water.
APPROACHES STANDARD	• List the different sources of water. • Define ground water and surface water. • List three types of water storage.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0
Science: 1.0, 12.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0
English Language Arts: 2.0, 4.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 2.0</u>: Students will understand hydrology as it relates to natural resources.

Performance Standard 2.2	**Students will be able to comprehend and describe the hydrologic cycle.**
EXCEEDS STANDARD	• Critique major issues concerning the use, management and regulations of water. • Construct a model of the hydrologic cycle. • Interpret different landforms resulting from the hydrologic cycle.
MEETS STANDARD	2.2.1 Describe and explain the operation of the hydrologic cycle. 2.2.2 Explain how the hydrologic cycle causes weathering and soil formation. 2.2.3 Explain the effect of precipitation on ground water recharge. 2.2.4 Illustrate the correlation between ground water and surface water.
APPROACHES STANDARD	• Draw and label the hydrologic cycle. • Describe three types of surface waters. • Define water's role in erosion.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0, 6.0, 7.0, 9.0
Science: 13.0, 15.0, 17.0, 20.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 2.0</u>: Students will understand hydrology as it relates to natural resources.

Performance Standard 2.3	**Students will explore the factors contributing to water quality.**
EXCEEDS STANDARD	• Determine the various beneficial uses of water and the water quality necessary for each use. • Prepare a valid water sample and interpret the results.
MEETS STANDARD	2.3.1 Identify components of water. 2.3.2 Examine trace elements found in water. 2.3.3 Identify the natural and introduced sources of trace elements found in water. 2.3.4 Identify the natural and introduced sources of contaminants found in water. 2.3.5 Identify the natural and engineered methods of water treatment. 2.3.6 Identify various factors contributing to water quality.
APPROACHES STANDARD	• List five trace elements of water. • Describe the need for water treatment.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0
Science: 1.0, 2.0, 4.0, 5.0, 10.0, 12.0, 13.0, 15.0, 16.0, 17.0, 19.0, 20.0
English Language Arts: 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 2.0</u>: Students will understand hydrology as it relates to natural resources.

Performance Standard 2.4	**Students will investigate the basis of water monitoring.**
EXCEEDS STANDARD	• Explore the effects of riparian conditions on surface water quality. • Research water quality monitoring procedures. • Design and conduct a water monitoring project.
MEETS STANDARD	2.4.1 Explain the importance of monitoring surface and ground water quality. 2.4.2 Explore the various types of water monitoring. 2.4.3 Describe the use of a Material Safety Data Sheet (MSDS) and develop a safety plan for water quality monitoring.
APPROACHES STANDARD	• List three types of water monitoring. • Define water monitoring and its importance.

Nevada Academic Standards Correlation:
Science: 2.0, 16.0, 19.0, 20.0, 23.0, 24.0
English Language Arts: 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 3.0</u>: Students will understand air quality as it relates to natural resource systems.

Performance Standard 3.1	**Students will investigate the composition of the atmosphere.**
EXCEEDS STANDARD	• Illustrate nitrogen and carbon cycles. • Distinguish between different layers of the atmosphere.
MEETS STANDARD	3.1.1 Describe the composition and structure of the earth's atmosphere. 3.1.2 Explain how ozone in the atmosphere makes life on earth possible. 3.1.3 Describe the greenhouse effect. 3.1.4 Explain how atmospheric gases interact with the earth in nitrogen and carbon cycles. 3.1.5 Investigate the effect of air quality on the ecosystem. 3.1.6 Examine common meteorological occurrences.
APPROACHES STANDARD	• List layers of the atmosphere. • Draw, label, and explain the greenhouse effect. • Name two professions related to atmospheric sciences. • Name two commonly occurring meteorological conditions. • Explain how the balance of carbon dioxide and oxygen is maintained.

Nevada Academic Standards Correlation:
Science: 1.0, 3.0, 10.0, 13.0, 17.0, 18.0, 19.0, 20.0, 21.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 3.0</u>: Students will understand air quality as it relates to natural resource systems.

Performance Standard 3.2	**Students will explore major issues affecting air quality and monitoring techniques.**
EXCEEDS STANDARD	• Develop a model for air monitoring. • Investigate techniques to improve air quality.
MEETS STANDARD	3.2.1 Define air pollution and explain how air quality is measured. 3.2.2 Describe the major sources of air pollution and its effects. 3.2.3 Examine major issues relating to air pollution and air quality. 3.2.4 Identify state and federal air quality standards. 3.2.5 Describe air quality monitoring techniques. 3.2.6 Describe common methods used to control air pollution.
APPROACHES STANDARD	• Give examples of major issues relating to air pollution and air quality. • Name three common air pollutants.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 4.0, 5.0, 6.0, 7.0
Science: 2.0, 13.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0, 22.0, 23.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 4.0</u>: Students will examine energy resources and how they interact with the ecosystem.

Performance Standard 4.1	**Students will recognize the types and importance of energy resources.**
EXCEEDS STANDARD	• Compare and contrast practices for conserving energy resources.
MEETS STANDARD	4.1.1 Differentiate between renewable and non-renewable energy resources. 4.1.2 Explore types of renewable energy resources. 4.1.3 Describe how electric power is generated from both renewable and non-renewable resources. 4.1.4 Explore types of non-renewable energy resources.
APPROACHES STANDARD	• List the different types of energy resources.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 6.0
Science: 3.0, 4.0, 16.0, 17.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 4.0</u>: Students will examine energy resources and how they interact with the ecosystem.

Performance Standard 4.2	**Students will explore the relationship between energy, development and use as it relates to the ecosystem.**
EXCEEDS STANDARD	• Compare and contrast positive and negative effects associated with resource extraction, energy development and energy uses to the ecosystem. • Compare and contrast practices for conserving renewable and non-renewable energy resources.
MEETS STANDARD	4.2.1 Identify the different natural resources for energy production. 4.2.2 Differentiate between the methods of extraction of energy resources. 4.2.3 Analyze positive and negative impacts of energy development to the environment. 4.2.4 Identify practices for conserving renewable and non-renewable energy resources. 4.2.5 Examine uses of energy.
APPROACHES STANDARD	• Select two energy sources and discuss the use of each. • Describe three methods of energy conservation.

Nevada Academic Standards Correlation:
Science: 3.0, 16.0, 17.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 5.0</u>: Students will examine minerals in Nevada and their socioeconomic impact.

Performance Standard 5.1	**Students will develop an appreciation for the mineral resources in Nevada.**
EXCEEDS STANDARD	• Compare and contrast the economic contribution of mineral resources relative to other major industries in Nevada (gaming, agriculture, tourism). • Investigate the historical settlement of Nevada relative to mineral development.
MEETS STANDARD	5.1.1 Describe the mineral resources and production in Nevada. 5.1.2 Describe the historical significance of mineral development in Nevada. 5.1.3 Describe the current state of mineral development in Nevada. 5.1.4 Identify uses of minerals.
APPROACHES STANDARD	• Map and label the historical and current mine sites of Nevada. • Identify the primary minerals mined at each mine site in Nevada.

Nevada Academic Standards Correlation:
Science: 5.0, 10.0, 12.0, 13.0, 15.0, 16.0, 19.0, 20.0, 24.0
English Language Arts: 1.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 5.0</u>: Students will examine minerals in Nevada and their socioeconomic impact.

Performance Standard 5.2	**Students will examine the mineral development as it relates to natural resource management.**
EXCEEDS STANDARD	• Examine the state and federal mine development permitting standards required. • Evaluate the role of the community in mineral development.
MEETS STANDARD	5.2.1 Identify the potential natural resources affected by mineral development and determine the potential impacts. 5.2.2 Discuss the relationship between mineral development and ecosystem. 5.2.3 Identify the role of the state and federal agencies in mine development. 5.2.4 Examine reclamation objectives relative to mine development. 5.2.5 Examine the natural resource protection and monitoring required for mineral development. 5.2.6 Examine sustainability to the ecosystem through the reclamation process.
APPROACHES STANDARD	• List four natural resources that could be affected by mineral development. • Identify the state and federal agencies involved with mineral development.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 17.0, 18.0, 19.0, 20.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 5.0</u>: Students will examine minerals in Nevada and their socioeconomic impact.

Performance Standard 5.3	**Students will examine the mineral development as it relates to cultural resources and socioeconomics in Nevada.**
EXCEEDS STANDARD	• Appraise potential sustainable economic opportunities available to communities from mineral development.
MEETS STANDARD	5.3.1 Define cultural resources and socioeconomics as they relate to mineral development in Nevada under state law. 5.3.2 Investigate the steps required to comply with the National Historic Preservation Act. 5.3.3 Identify the types of cultural resources and define the criteria for significance for eligibility on the National Register of Historic Places. 5.3.4 Investigate the range of economic contributions of mining in Nevada. 5.3.5 Identify the economic significance to communities resulting from mineral development.
APPROACHES STANDARD	• Identify the intent of the National Historic Preservation Act. • Identify the communities affected by mineral development.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0, 6.0
Science: 16.0, 17.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 6.0</u>: Students will examine vegetation resources in Nevada.

Performance Standard 6.1	**Students will examine plant biology.**
EXCEEDS STANDARD	• Participate in the state FFA range management contest. • Distinguish between different plant cell organelles. • Collect and identify species of native plants. • Demonstrate plant propagation.
MEETS STANDARD	6.1.1 Examine the biological processes involved in plant physiology. 6.1.2 Identify the major life forms of plants. 6.1.3 Explore the interaction of plants with their environment. 6.1.4 Differentiate between the various taxonomic classes. 6.1.5 Investigate the environmental factors that affect plant growth. 6.1.6 Describe the methods of natural plant propagation.
APPROACHES STANDARD	• Draw and label the basic plant anatomy. • List methods of plant propagation. • Recognize how plants are classified.

Nevada Academic Standards Correlation:
Science: 6.0, 7.0, 8.0, 9.0, 13.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 6.0</u>: Students will examine vegetation resources in Nevada.

Performance Standard 6.2	**Students will be able to identify the characteristics of plant communities and community dynamics.**
EXCEEDS STANDARD	• Participate in the state FFA range management contest. • Produce an experiment demonstrating plant interaction mechanisms.
MEETS STANDARD	6.2.1 Define the range of plant communities found in Nevada and describe their typical occurrences. 6.2.2 Identify the differences among competition, symbiosis, parasitism, and mutualism. 6.2.3 Describe the successional theory of plant community development. 6.2.4 Explain how plant succession changes forage availability. 6.2.5 Investigate the different life zones found in Nevada and their locations. 6.2.6 Explore plant mechanisms that modify their environment. 6.2.7 Investigate the natural and introduced factors that effect ecosystem changes.
APPROACHES STANDARD	• Define plant communities. • Define life zones. • Draw the plant community successional stages.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0, 6.0
Science: 13.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 22.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 6.0</u>: Students will examine vegetation resources in Nevada.

Performance Standard 6.3	**Students will explore the agricultural vegetation of Nevada.**
EXCEEDS STANDARD	• Participate in the state FFA range management contest. • Develop a plan for improving an agricultural site. • Develop and implement an experiment that demonstrates practices to increase agricultural production.
MEETS STANDARD	6.3.1 Define the variety of natural and introduced agricultural vegetative resources in Nevada. 6.3.2 Identify the introduced agricultural vegetation resources in Nevada and where they are grown. 6.3.3 Investigate the unique characteristics found in Nevada that support the agricultural crops. 6.3.4 Identify the economic significance to state and communities resulting from agriculture. 6.3.5 Explore the positive and negative impacts of agriculture upon natural resources in Nevada.
APPROACHES STANDARD	• List agricultural crops growing in Nevada. • Estimate the economic significance of agriculture to the communities.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 5.0, 7.0, 9.0
Science: 16.0, 17.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

Content Standard 6.0: Students will examine vegetation resources in Nevada.

Performance Standard 6.4	**Students will investigate the basis of vegetation standards and monitoring.**
EXCEEDS STANDARD	• Distinguish between the objectives of riparian and upland monitoring. • Develop an integrated noxious weed control plan in your community.
MEETS STANDARD	6.4.1 Investigate the impact of noxious and invasive weeds on range and agricultural lands. 6.4.2 Identify the types of standards used by federal agencies related to rangeland health and productivity. 6.4.3 Identify the revegetation standards used by state and federal agencies as related to mine reclamation. 6.4.4 Describe the types of monitoring used to determine if range and revegetation standards are being met.
APPROACHES STANDARD	• List the types of monitoring. • List five noxious or invasive weeds.

Nevada Academic Standards Correlation:
Science: 5.0, 20.0, 22.0, 23.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 7.0</u>: Students will explore the science of range management.

Performance Standard 7.1	**Students will be able to identify the components of range management.**
EXCEEDS STANDARD	• Breadboard the multiple uses of rangelands and determine the stakeholders for each. • Blueprint the economic contributions of rangeland to the local, state and national economies.
MEETS STANDARD	7.1.1 Define rangeland. 7.1.2 Distinguish between the different types of rangelands. 7.1.3 Identify the major components that comprise range management. 7.1.4 Explain the role of plants, animals, socioeconomics and physical factors in range management. 7.1.5 Relate the role of rangeland plants for the production of food, fiber, wood, water and wildlife.
APPROACHES STANDARD	• List three major components of rangeland. • Define three physical factors in range management. • Name five products derived from the rangeland.

Nevada Academic Standards Correlation:
Math: 3.0, 5.0, 6.0, 9.0
Science: 15.0, 16.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 7.0</u>: Students will explore the science of range management.

Performance Standard 7.2	**Students will examine range animal nutrition.**
EXCEEDS STANDARD	• Develop a plan to optimize nutritional availability.
MEETS STANDARD	7.2.1 Explore the reproductive life cycle and nutritional needs of animals on range. 7.2.2 Explore the role of the carbon cycle in animal nutrition. 7.2.3 Discuss the temporal and spatial distribution of rangeland nutrition. 7.2.4 Examine the effects of nutritional shortage on reproduction, production and ranch economics. 7.2.5 Analyze the role of range nutrient supplement and water development on domestic animals and wildlife.
APPROACHES STANDARD	• Determine the seasonal nutritional needs of various animals. • List three range nutritional supplements.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0
Science: 6.0, 15.0
English Language Arts: 1.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 7.0</u>: Students will explore the science of range management.

Performance Standard 7.3	**Students will determine the factors affecting carrying capacity of rangelands and compare and contrast between the various grazing systems.**
EXCEEDS STANDARD	• Relate carrying capacity to plant community dynamics. • Prescribe appropriate grazing systems to simultaneously optimize economic income and rangeland health.
MEETS STANDARD	7.3.1 Define carrying capacity and determine how it is calculated. 7.3.2 Define Animal Unit Month (AUM) and how they are determined. 7.3.3 Explore the relationship between carrying capacity and AUMs. 7.3.4 Analyze grazing intensity, timing, frequency and selectiveness as it relates to grazing systems. 7.3.5 Examine different grazing systems and their effects on rangeland health.
APPROACHES STANDARD	• List three different grazing systems. • Define carrying capacity. • Define Animal Unit Month.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0
Science: 16.0, 17.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 7.0</u>: Students will explore the science of range management.

Performance Standard 7.4	**Students will investigate the factors contributing to range ecology.**
EXCEEDS STANDARD	• Compare and contrast two or more range sites. • Evaluate the range conditions on the above range sites. • Develop a range management plan for above range sites to maximize range ecology and productivity.
MEETS STANDARD	7.4.1 Identify the factors that determine a range site. 7.4.2 Evaluate the relationship between range condition and range site. 7.4.3 Identify the natural and anthropogenic factors that influence range conditions. 7.4.4 Critique the range management practices that affect range condition. 7.4.5 Identify the disturbance factors responsible for plant community diversity on a landscape scale.
APPROACHES STANDARD	• Define range condition. • Define range site. • List four components of range condition.

Nevada Academic Standards Correlation:
Math: 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 9.0
Science: 15.0, 16.0
English Language Arts: 1.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 7.0</u>: Students will explore the science of range management.

Performance Standard 7.5	**Students will investigate range vegetation manipulation practices.**
EXCEEDS STANDARD	• Prescribe the appropriate vegetation manipulation practices for two or more range sites.
MEETS STANDARD	7.5.1 Describe the effects of mechanical vegetation manipulation. 7.5.2 Describe the effects of biological vegetation manipulation. 7.5.3 Describe the effects of chemical vegetation manipulation. 7.5.4 Describe the effects of fire vegetation manipulation.
APPROACHES STANDARD	• List four range vegetative manipulation practices.

Nevada Academic Standards Correlation:
Science: 17.0, 19.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

Content Standard 7.0: Students will explore the science of range management.

Performance Standard 7.6	**Students will investigate the principles involved in range inventory monitoring.**
EXCEEDS STANDARD	• Develop a monitoring plan for one or more range sites. • Implement a portion of the monitoring plan. • Analyze, interpret and present the monitoring data.
MEETS STANDARD	7.6.1 Define the types and techniques involved in range monitoring. 7.6.2 Compare and contrast aerial versus ground monitoring methods. 7.6.3 Describe the types of range data collected and the tools used to manage and present data. 7.6.4 Explain the types of analysis used in the interpretation of range monitoring data.
APPROACHES STANDARD	• Describe the objectives of range monitoring. • List the tools used in range monitoring.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 20.0, 22.0, 23.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 8.0</u>: Students will understand forest ecology.

Performance Standard 8.1	**Students will develop historical and regional perspective of the forest resources and future forest management opportunities.**
EXCEEDS STANDARD	• Develop a sustainable plan for the use of forest resources in Nevada.
MEETS STANDARD	8.1.1 Examine the historical uses of forest resources in Nevada. 8.1.2 Discuss current forest practices in Nevada. 8.1.3 Describe the different types of forest in Nevada and examine their ecology. 8.1.4 Identify opportunities for the use of forest resources in Nevada. 8.1.5 Describe the effect of pinyon-juniper encroachment on range site productivity.
APPROACHES STANDARD	• List the forest species in Nevada. • Define synecology and autecology.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 17.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 9.0</u>: Students will investigate fish and wildlife ecology.

Performance Standard 9.1	**Students will differentiate among the various categories of wildlife and explore the importance and distribution of fish and wildlife resources in Nevada.**
EXCEEDS STANDARD	• Describe the economic impacts of fish wildlife resources to Nevada. • Evaluate the relationship between habitat distribution and wildlife populations.
MEETS STANDARD	9.1.1 Identify the seven categories of wildlife (big game, fur bearers, predators, upland game, waterfowl, fish and non-game). 9.1.2 Identify the distribution of wildlife associated with various habitats in Nevada. 9.1.3 Describe the importance of wildlife including indigenous and migratory species, their physical and behavioral characteristics, habitat, and management.
APPROACHES STANDARD	• Define game and non-game fish and wildlife species. • List the major game species in Nevada. • List the major habitat types in Nevada.

Nevada Academic Standards Correlation:
Math: 2.0, 4.0, 5.0, 6.0, 7.0, 9.0
Science: 15.0, 16.0, 17.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 9.0</u>: Students will investigate fish and wildlife ecology.

Performance Standard 9.2	**Students will examine wildlife and aquatic ecology.**
EXCEEDS STANDARD	• Explain the concept that habitat is defined by seral stage versus location. • Prescribe practices that can be used to improve fisheries habitat in a cold water and warm water example.
MEETS STANDARD	9.2.1 Describe the type of fisheries habitats. 9.2.2 Identify the factors that affect fisheries habitats. 9.2.3 Describe the range of wildlife habitats found in Nevada. 9.2.4 Describe the seasonal habitat requirements, (i.e., seral stage) for various species of wildlife.
APPROACHES STANDARD	• Define seral stage. • List the types of aquatic habitat.

Nevada Academic Standards Correlation:
Science: 15.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 9.0</u>: Students will investigate fish and wildlife ecology.

Performance Standard 9.3	**Students will investigate the relationship between uplands and riparian habitats.**
EXCEEDS STANDARD	• Interpret the condition of a watershed with respect to the hydrologic function of both the upland and riparian components.
MEETS STANDARD	9.3.1 Describe the hydrologic function of upland habitats. 9.3.2 Describe the range of hydrologic functions of riparian habitats. 9.3.3 Identify the factors that affect the hydrologic functions of upland and riparian habitats.
APPROACHES STANDARD	• Describe riparian habitat and upland habitat. • Explain the importance of riparian areas. • Associate riparian areas with rangeland health.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 17.0, 19.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 9.0</u>: Students will investigate fish and wildlife ecology.

Performance Standard 9.4	**Students will examine the endangered species act and its implementation.**
EXCEEDS STANDARD	• Summarize a case history of an endangered species as it relates to socioeconomic impacts. • Analyze the effectiveness of the ESA and formulate potential improvements if determined.
MEETS STANDARD	9.4.1 Describe the factors that lead to the passage of the endangered species act. 9.4.2 Investigate the intent and mission of the endangered species act. 9.4.3 Explore the listing process under the ESA and what it takes to delist a species. 9.4.4 Identify the agency and their jurisdiction for implementation of ESA.
APPROACHES STANDARD	• Define threatened species and endangered species under the ESA. • Generalize the intent of the endangered species act. • List five endangered species in Nevada with at least one specific to Southern Nevada.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 9.0
Science: 8.0, 9.0, 12.0, 15.0, 16.0, 17.0, 18.0, 20.0, 21.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 9.0</u>: Students will investigate fish and wildlife ecology.

Performance Standard 9.5	**Students will investigate the basis of wildlife and aquatic monitoring.**
EXCEEDS STANDARD	• Develop a monitoring plan for one or more wildlife species. • Implement a portion of the monitoring plan. • Analyze, interpret and present the monitoring data.
MEETS STANDARD	9.5.1 Define the types and techniques involved in wildlife and aquatic monitoring. 9.5.2 Compare and contrast wildlife and aquatic monitoring methods. 9.5.3 Describe the types of monitoring data collected and the tools used to manage and present data. 9.5.4 Explain the types of analysis used in the interpretation of wildlife and aquatic monitoring data.
APPROACHES STANDARD	• Describe the objectives of wildlife and aquatic monitoring. • List the tools used in wildlife and aquatic monitoring.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 20.0, 22.0, 23.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 10.0</u>: Students will understand fire ecology dynamics.

Performance Standard 10.1	**Students will explore the effects of fire on the ecosystem.**
EXCEEDS STANDARD	• Visualize a range condition's pre-settlement versus today. • Compare the effects of wildfire on the ecosystem pre-settlement versus today. • Develop an ecosystem recovery plan using fire as a management tool.
MEETS STANDARD	10.1.1 Determine the pre-settlement fire history in Nevada. 10.1.2 Explore the factors that change the fire history post-settlement. 10.1.3 Identify the factors affecting fire frequency today in Nevada. 10.1.4 Compare fire effects on the ecosystem today versus pre-settlement. 10.1.5 Describe the effects on the ecosystem from mosaics created by fires.
APPROACHES STANDARD	• List the three components of the fire triangle. • Identify the beneficial and detrimental effects of fire on the ecosystem.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 17.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 10.0</u>: Students will understand fire ecology dynamics.

Performance Standard 10.2	**Students will explore the fire cycle and examine fire as a management tool on the rangeland ecosystem.**
EXCEEDS STANDARD	• Interpret the variables that determine fire intensity. • Develop a prescribed burn plan for two different range sites.
MEETS STANDARD	10.2.1 Compare and contrast fire interval and fire frequency. 10.2.2 Describe the factors that affect the fire cycle. 10.2.3 Examine how plant succession affects fuel loading. 10.2.4 Examine how anthropogenic factors affect fuel loading. 10.2.5 Describe the relationship between fuel loading and fire intensity.
APPROACHES STANDARD	• Define the fire cycle. • List tools to control the extent of a prescribed burn.

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 4.0, 5.0, 6.0, 9.0
Science: 15.0, 16.0, 17.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 11.0</u>: Students will understand outdoor recreation and its importance to natural resources.

Performance Standard 11.1	**Students will explore opportunities associated with outdoor recreation.**
EXCEEDS STANDARD	• Develop a portfolio for a specific career as it relates to outdoor recreation. • Evaluate the recreational opportunities associated with a local outdoor recreational site. • Examine state and Federal policies affecting outdoor recreation industries.
MEETS STANDARD	11.1.1 Explore careers opportunities related to outdoor recreation. 11.1.2 Explore primary and alternate business opportunities related to outdoor recreation. 11.1.3 Explore vocational opportunities relating to outdoor recreation. 11.1.4 Investigate conservation activities as it relates to outdoor recreation and wildlife habitat. 11.1.5 Investigate the impact of outdoor recreation on the ecosystem of private, state and Federal lands.
APPROACHES STANDARD	• List five employment opportunities associated with outdoor recreation.

Nevada Academic Standards Correlation:
Science: 9.0, 18.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 12.0</u>: Students will explore outdoor safety and survival skills.

Performance Standard 12.1	**Students will examine proper response to outdoor emergency situations.**
EXCEEDS STANDARD	• Analyze outdoor recreation scenarios to determine appropriate safety and first aid procedures.
MEETS STANDARD	12.1.1 Demonstrate proper first aid techniques. 12.1.2 Identify harmful or poisonous plants, insects and reptiles. 12.1.3 Describe personal safety precautions during adverse weather conditions. 12.1.4 Identify appropriate outdoor clothing and safety equipment for the various seasons in Nevada.
APPROACHES STANDARD	• List ten items to be found in a basic first aid kit. • Name three harmful or poisonous plants, insects and reptiles.

Nevada Academic Standards Correlation:
Science: 15.0, 16.0, 21.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Natural Resources and Wildlife Management
Performance Level Descriptors

<u>Content Standard 13.0</u>: Students will understand the importance and application of GPS/GIS in natural resource management.

Performance Standard 13.1	**Students will investigate GPS/GIS systems and their applications.**
EXCEEDS STANDARD	• Demonstrate the ability to use a GPS unit.
MEETS STANDARD	13.1.1 Explore the history of navigation as it relates to GIS and GPS development. 13.1.2 Define the uses of geographic information systems and spatial analysis as it applies to natural resource management. 13.1.3 Describe the purpose and function of Global Positioning System. 13.1.4 Explore geomorphic features and their relationship to range management.
APPROACHES STANDARD	• List the uses of GPS and GIS technology. • Name basic navigational tools and maps used in resource management.

Nevada Academic Standards Correlation:
Math: 3.0, 4.0, 5.0, 6.0
Science: 1.0, 10.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

<u>Content Standard 14.0</u>: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.1	**Students shall demonstrate problem-solving skills.**
EXCEEDS STANDARD	• Analyze, evaluate, and prepare a solution to a current controversial issue within the area of Natural Resources.
MEETS STANDARD	14.1.1 Solve a work-related problem using the appropriate steps in the problem-solving process. 14.1.2 Demonstrate brainstorming techniques. 14.1.3 Examine and explain the advantages and disadvantages of alternative solutions to one or more problems. 14.1.4 Create an action plan based upon a solution to a work-related problem. 14.1.5 Identify the benefits of solving a work-related problem.
APPROACHES STANDARD	• List five (5) jobs in Natural Resources field. • List three governmental agencies in Natural Resources Management

Nevada Academic Standards Correlation:
Math: 2.0, 3.0, 4.0, 5.0, 6.0 7.0, 9.0
Science: 18.0, 20.0, 21.0, 22.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.2	**Students shall demonstrate critical-thinking skills.**
EXCEEDS STANDARD	• Compare and contrast emotional thinking to logical thinking processes and develop means to address each thinking process.
MEETS STANDARD	14.2.1 Identify and explain the essential elements of the critical thinking process. 14.2.2 Demonstrate critical-thinking skills necessary in the workplace. 14.2.3 Explain how emotional thinking and logical thinking affect decision making in the workplace. 14.2.4 Explain the difference between reliable and unreliable observations and statements of facts. 14.2.5 Recognize patterns or relationships through observation and discovery.
APPROACHES STANDARD	• List elements of critical-thinking processes.

Nevada Academic Standards Correlation:
Science: 18.0, 21.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.3	**Students shall demonstrate the ability to speak, write and listen effectively.**
EXCEEDS STANDARD	• Orally defend your position on a current critical issue in Natural Resources Management. • Prepare a written defense of your position on a current critical issue in Natural Resources Management.
MEETS STANDARD	14.3.1 Explain the benefits of effective communication skills in the workplace. 14.3.2 Effectively interpret and respond to verbal and nonverbal messages. 14.3.3 Demonstrate proper telephone etiquette. 14.3.4 Effectively communicate thoughts, ideas and information in writing. 14.3.5 Organize ideas and communicate orally; is able to effectively demonstrate job skills to others. 14.3.6 Locate, understand and interpret written information in documents such as manuals, graphs and schedules. 14.3.7 Select and utilize an appropriate medium for conveying messages with dignity and respect. 14.3.8 Organize information into the appropriate format in accordance with standard practices, which includes prewriting, drafting, proofreading, editing/revising, and preparing final copy. 14.3.9 Demonstrate sensitivity to cultural diversity in communication. 14.3.10 Identify common communication barriers and methods for improving communication.
APPROACHES STANDARD	• List steps required for active listening. • List steps required for preparing a positive persuasive speech.

Nevada Academic Standards Correlation:
Science: 21.0, 22.0, 24.0
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.4	**Students shall demonstrate the ability to select, apply and maintain appropriate technology.**
EXCEEDS STANDARD	• Develop proper use of GPS and proper introductory use of GIS.
MEETS STANDARD	14.4.1 Demonstrate ability to utilize basic keyboarding techniques. 14.4.2 Demonstrate ability to utilize other input devices. 14.4.3 Demonstrate ability to utilize various electronic research methods. 14.4.4 Demonstrate knowledge of the basic technology systems currently available and how they apply to your field (i.e., word processing, spreadsheets, multimedia applications, and database). 14.4.5 Investigate and explain the use, benefits, and costs of technological developments in workplace and school. 14.4.6 Identify and demonstrate the appropriate use of technology to enhance the efficiency of the workplace and school. 14.4.7 Demonstrate routine maintenance and repair of technological equipment.
APPROACHES STANDARD	• Describe GPS and its function. • Describe GIS and its use in Natural Resources Management.

Nevada Academic Standards Correlation:
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

<u>Content Standard 14.0</u>: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.5	**Students shall demonstrate leadership and teamwork skills.**
EXCEEDS STANDARD	• Demonstrate ten procedures of parliamentary law. • Lead a group discussion. • Analyze five stages of group development.
MEETS STANDARD	14.5.1 Work cooperatively with others when given a group project. 14.5.2 Explain traits necessary to effectively lead and influence individuals and groups. 14.5.3 Demonstrate appropriate attitudes and behaviors for effective leadership. 14.5.4 Demonstrate respect for team members, team processes and team goals. 14.5.5 Participate in the implementation of a group's decision and evaluate the results. 14.5.6 Demonstrate the qualities of an effective leader and team member. 14.5.7 Describe the importance of company dress codes.
APPROACHES STANDARD	• Explain the importance of groups. • Explain how to organize groups. • Participate in FFA activities at the local level.

Nevada Academic Standards Correlation:
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.6	**Students shall demonstrate sound workplace ethics.**
EXCEEDS STANDARD	• Model the eleven points of the FFA Code of Ethics while participating in school, community and FFA activities.
MEETS STANDARD	14.6.1 Develop personal work ethics through work experience. 14.6.2 Describe the importance of ethics practiced in the workplace. 14.6.3 Demonstrate regular attendance, promptness, and the willingness to follow instructions and complete an assigned task. 14.6.4 Demonstrate appropriate personal and professional attitudes and behaviors. 14.6.5 Maintain a safe, clean, and organized work area. 14.6.6 Demonstrate awareness of legal responsibilities related to individual performance, safety and customer satisfaction. 14.6.7 Demonstrate knowledge of various types of harassment.
APPROACHES STANDARD	• Define "Ethics." • List the importance of ethics in the workplace.

Nevada Academic Standards Correlation:
Science: 24.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.7	**Students shall demonstrate the ability to effectively manage resources in high-performance workplaces.**
EXCEEDS STANDARD	• Discuss the factors that affect the development of resources in high-performance workplaces. • Hold an office or position in the FFA program.
MEETS STANDARD	14.7.1 Identify and organize the human resources needed to complete a job assignment. 14.7.2 Identify and organize the material resources and space requirements needed to complete a job assignment. 14.7.3 Effectively use technology at its highest level to complete a job assignment. 14.7.4 Demonstrate cooperation and leadership in a team at school or in a workplace setting. 14.7.5 Use the basic components of effective time management. 14.7.6 Recognize the need for management skills in the workplace with regard to stress, anger management, and substance abuse. 14.7.7 Estimate costs and prepare a detailed work order. 14.7.8 Develop a time schedule and prioritized task list to complete a job assignment.
APPROACHES STANDARD	• Define "high-performance workplace." • Discuss the ingredients and resources included in managing resources in high-performance workplaces.

Nevada Academic Standards Correlation:
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.8	**Students shall demonstrate career planning and development skills.**
EXCEEDS STANDARD	• Develop a plan to match careers with their personal characteristics. • Utilize the resources found in the Career Information system to describe careers in Natural Resources Management. • Construct a career portfolio. • Participate in a job interview. • Participate in a Career Development Event at the local, regional, state and/or national level.
MEETS STANDARD	14.8.1 Prepare a job application. 14.8.2 Prepare a personal résumé. 14.8.3 Complete a personal aptitude and interest inventory. 14.8.4 Participate in a job interview. 14.8.5 Establish short-term career goals. 14.8.6 Establish long-term career goals. 14.8.7 Use the Nevada Career Information System (NCIS) or a similar computer-based program to research careers in a chosen field. 14.8.8 Participate in an organized job-shadowing activity. 14.8.9 Participate in a community-service project. 14.8.10 Construct a career portfolio.
APPROACHES STANDARD	• Differentiate between work, job, occupation, and career. • Explain the diversity of agriculture education job placement. • List sources used in finding employment.

Nevada Academic Standards Correlation:
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Employability Skills
Master List of Core Indicators

Content Standard 14.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 14.9	**Students shall demonstrate the ability of job retention and lifelong learning skills.**
EXCEEDS STANDARD	• Discuss how to merit employment promotions. • Develop a portfolio based on participation in SAE, CDE, and leadership activities. • Participate in a school-based enterprise. • Maintain an employment/career portfolio.
MEETS STANDARD	14.9.1 Maintain an employment/career portfolio. 14.9.2 Identify strategies for balancing work and family roles. 14.9.3 Demonstrate understanding of the need for lifelong learning in a rapidly changing job market. 14.9.4 Identify strategies to maintain employment in the face of job reductions. 14.9.5 Develop long-term career-planning strategies. 14.9.6 Identify various educational options needed for job advancement. 14.9.7 Demonstrate interpersonal skills needed for job retention. 14.9.8 Identify and model sound workplace ethics, such as loyalty, punctuality and initiative.
APPROACHES STANDARD	• Explain the importance of positive response to authority. • Explain the proper procedure for leaving employment.

Nevada Academic Standards Correlation:
English Language Arts: 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 9.0, 10.0

Crosswalk of Natural Resources and Wildlife Management and Mathematical Academic Standards

Performance Indicators	Mathematical Academic Standards
7.6, 3.1	1.12.3 Apply the properties and theories of the real number system to everyday situations.
7.6	2.12.2 Represent and solve problems using **discrete** structures including graphs and matrices, with and without technology.
1.2, 2.3, 3.2, 7.3, 7.6, 9.5, 14.1	2.12.3 Create and use different forms of a variety of equations, proportions, and/or formulas (e.g., I=PRT or R=I/PT), solving for the needed variable as necessary in given situations.
1.1, 1.2, 2.1, 2.2, 3.2, 4.1, 5.3, 6.2, 6.3, 7.2, 7.3, 7.6, 9.1, 9.5, 10.2, 14.1	2.12.5 Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.
1.1, 1.2	2.12.6 Determine the **domain** and **range** of linear relations given a graph or a set of **ordered pairs**; explain their importance in problem-solving situations.
1.1, 1.2, 2.2, 2.3, 3.2, 5.3, 6.2, 7.1, 7.2, 7.6, 9.5, 10.2, 14.1	3.12.1 Convert between customary and metric systems; convert among monetary systems.
1.1, 1.2, 4.1, 4.2, 6.3, 7.1, 7.2, 7.3, 7.6, 9.5, 10.2, 13.1, 14.1	3.12.2 Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.
1.2, 2.3, 6.2	3.12.3 Distinguish and differentiate among the structures, language and uses of systems of measures (e.g., linear, square units, cubic units); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.
7.2, 7.6, 9.5, 10.2, 13.1, 14.1	3.12.5 Use relationships (e.g., proportions) and formulas (indirect measurement) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.
14.1	4.12.5 Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and **perpendicular lines** and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.
3.2, 7.2, 7.6, 9.1, 9.5, 10.2, 13.1, 14.1	4.12.8 Use tools, technology, and models to sketch, draw, and construct geometric figures in order to solve problems and to demonstrate the properties of geometric figures.
7.2, 7.3, 9.5, 14.1	4.12.9 Construct, justify and defend mathematical conclusions using logical, sequential, **deductive reasoning** supported by established mathematical principles.
1.1, 1.2, 2.1, 2.2, 2.3, 3.2, 5.3, 6.2, 6.3, 7.1, 7.2, 7.3, , 7.6, 9.1, 9.5, 10.2, 13.1, 14.1	5.12.1 Use calculators and computers to create and manipulate tables, graphs, and matrices to communicate statistical information; use the shape of graphs of normal distributions to compare and analyze information.
9.5	5.12.2 Design, conduct, analyze, and communicate the results of multi-stage probability experiments.
9.5	5.12.3 Distinguish between and apply **permutations** and combinations using a variety of methods, including The Fundamental Counting Principle.
1.1, 1.2, 2.2, 3.2, 4.2, 5.3, 6.2, 6.3, 7.2, 7.3, 7.6, 9.1, 9.5, 10.2, 13.1, 14.1	5.12.4 Select and use the measures of central tendency such as mean, median, mode and variability including range, distribution and possible outliers that are appropriate for given situations.
1.1, 3.2, 5.3, 6.3, 7.3, 9.1, 9.5, 10.2, 13.1, 14.1	5.12.6 Design, construct, analyze, and select an appropriate type of graph to represent data to communicate the results of statistical experiments (e.g., write a survey question and analyze and communicate the findings).
1.1, 1.2, 9.5, 14.1	6.1 Select, modify, develop, and apply strategies to solve a variety of mathematical and practical problems and to investigate and understand mathematical concepts.

Performance Indicators	Mathematical Academic Standards
1.1, 1.2, 4.2, 7.3, 7.6, 9.5, 14.1	6.2 Apply previous experience and knowledge to new problem-solving situations.
1.1, 1.2, 9.5	6.5 Verify, interpret, and evaluate results with respect to the original problem situation, determining an efficient **strategy** for the given situation.
9.5	6.6 Try more than one strategy when the first strategy proves to be unproductive.
1.1, 1.2, 2.2, 3.2, 4.1, 5.3, 6.2, 7.1, 7.2, 7.3, 7.6, 9.1, 9.5, 10.2, 13.1, 14.1	6.13 Use technology, including calculators, to solve problems and verify solutions
2.2, 7.3, 7.6, 9.1, 9.5, 13.1, 14.1	6.14 Use technology, including calculators, to investigate, define, and describe quantitative relationships such as patterns and functions.
9.5	7.3 Read expository text to learn about mathematics.
1.1, 1.2, 2.2, 7.3, 14.1	7.6 Interpret and solve word problems without the necessity of key words or phrases.
14.1	7.9 Model and explain mathematical relationships using oral, written, graphical, and algebraic methods.
1.1, 1.2, 3.2, 6.3, 7.2, 7.3, 9.1, 9.5, 14.1	7.15 Use everyday language to explain thinking about strategies and solutions to mathematical problems.
7.2	8.3 Construct, justify, and defend mathematical conclusions using logical arguments, in situations related to mathematics, science, and technology.
7.2	8.4 Use patterns and relationships to analyze mathematical situations; draw logical conclusions about mathematical problems.
7.2	8.5 Follow a logical argument and judge its validity.
7.2	8.7 Recognize and apply deductive and inductive reasoning in both concrete and abstract contexts.
7.2, 7.3	8.8 Ask questions to reflect on, clarify, and extend thinking.
7.2	8.11 Determine relevant, irrelevant, and/or sufficient information to solve mathematical problems.
1.1, 1.2, 7.3	9.1 Link new concepts to prior knowledge.
7.2, 7.3	9.6 Use and analyze the connections between Mathematics and other disciplines.
1.1, 1.2, 6.3, 7.1, 7.3, 7.6, 9.1, 9.5, 10.2, 14.1	9.7 Apply mathematical thinking and modeling to solve problems that arise in other disciplines (e.g., rhythm in music and motion in science).
1.1, 1.2, 2.2, 6.3, 7.1, 7.3, 9.1, 9.5, 10.2, 14.1	9.8 Identify, explain, and use mathematics in everyday life.

Crosswalk of Natural Resources and Wildlife Management and Nevada State Science Academic Standards

Performance Indicators	Nevada Science Academic Standards
1.3	1.12.1 Investigate and describe how changes in motion are based on the **laws of motion**[1]**.**
2.1, 2.3, 3.1	1.12.4 Investigate and describe the relationship that exists between force, **pressure,** and area in general, and between pressure and depth in liquids.
13.1	1.12.5 Investigate and explain that magnetic forces are related to electric forces and can be thought of as different aspects of a single **electromagnetic force**. (e.g., electric motors, generators, radios).
1.1.2, 2.3, 2.4, 3.2	2.12.1 Investigate and describe **intrinsic** (color, odor, density) and **extrinsic** (e.g., size, mass, volume) physical properties of matter.
2.4	2.12.2 Explain that substances can be identified on the basis of specific energies given off or taken in by that substance.
1.1, 1.1.3	2.12.3 Explain how atoms may bond with one another by transferring or sharing electrons that are farthest from the nucleus.
2.3	2.12.4 Explain that the electromagnetic force between the nucleus and electrons holds the atom together.
2.3	2.12.5 Explain the properties of phases of matter in terms of the **kinetic molecular theory** and forces of attraction between particles.
1.2	2.12.6 Explain that carbon atoms can bond to one another to form a large variety of structures, including the molecules essential to life.
1.2, 4.1, 4.2	3.12.1 Explain that the transformation of energy usually results in some energy in the form of heat, which spreads by radiation, conduction, and sometimes convection into cooler places.
4.1, 4.2	3.12.4 Describe the properties of electrical circuits in terms of moving electrons, conductivity, resistance, and electrical potential energy.
3.1, 4.1, 4.2	3.12.5 Investigate and describe how matter and energy may be changed and energy can be transferred in many ways, but the entire **mass-energy budget** of the universe remains constant.
1.2, 2.3	4.12.2 Investigate and describe how chemical reaction rates depend on conditions in the reacting system, the properties of reacting materials, and the presence of certain rate-regulating chemicals.
1.2, 4.1	4.12.3 Investigate and describe how chemical reactions may release or consume energy.
2.3, 6.4, 7.7	5.12.1 Predict how light interacts with matter (e.g., reflection and refraction).
5.1	5.12.2 Simulate how the predictable rates of **nuclear reactions** can be used to estimate the age of some materials.
6.1	6.12.1 Explain how disease disrupts the **equilibrium** that exists in a healthy organism.
7.2	6.12.3 Investigate and describe how food molecules are broken down through a series of chemical reactions to provide energy and the material to make new molecules.
6.1	6.12.4 Investigate and describe how every cell is covered by a cell membrane and most cells also have specialized parts for the transport of materials, energy, transfer, protein building, waste disposal, information feedback, and movement.
1.2, 6.1	6.12.5 In **photosynthesis**, plants and many microorganisms use solar energy to combine molecules of carbon dioxide and water to form energy rich compounds and oxygen.
6.1	7.12.2 Investigate and describe how plant and animals have mechanisms that allow them to respond to changes in their environment.
9.4	8.12.2 Explain how relatedness among organisms can be estimated from the similarity of their DNA sequences.

Performance Indicators	Nevada Science Academic Standards
6.1	8.12.3 Investigate and describe how sorting and recombination of genes in sexual reproduction results in a great variety of possible gene combinations.
6.1, 11.1	8.12.6 Explain how diversity of species and variation among organisms within a species increase the chances for survival of life when large changes occur in the environment.
6.1, 11.1	9.12.3 Simulate and explain how the adaptation of a species can occur over many generations because of the unique characteristics that favor those individuals in an environment.
9.4	9.12.5 Explain how the extinction of species is a common occurrence and fossil records indicate that most species that have lived on the earth no longer exist.
1.1, 2.3, 5.1	10.12.1 Investigate and describe how rocks and minerals have different characteristics that reflect their origins and use.
1.1, 1.3, 2.3, 5.1	10.12.2 Investigate and describe how landforms are the result of a combination of constructive and destructive forces resulting from weathering, erosion, and the movement of **lithosphere** plates.
1.1.1	10.12.4 Investigate and describe how soil is derived from weathered rocks and decomposed organic material, and is found in layers.
1.3, 3.1	10.12.5 Explain how the composition of the Earth's atmosphere has changed in the past and continues to change.
1.3, 5.1, 13.1	10.12.6 Compare and contrast the **geologic features** of Nevada and local geological features.
1.3, 9.4	12.12.1 Explain how catastrophic events have occurred and greatly influenced Earth's history.
5.1	12.12.2 Simulate and explain how relative geologic time can be estimated by observing rock sequences and using fossils to correlate the sequences at various locations.
2.1, 2.3	12.12.3 Compare and contrast the variety of methods by which geologic time is determined, including **radioactive dating**.
2.3	13.12.1 Explain how Earth systems have two major internal sources of energy (decay of radioactive isotopes and the gravitational energy from Earth's original formation) and one major external source (the sun), all of which create heat.
1.2, 2.2, 2.3, 5.1	13.12.3 Investigate and describe how water is a solvent, (e.g., how it dissolves minerals and gases as it passes through the water cycle and carries them to oceans and lakes).
2.2	13.12.4 Simulate and describe how global climate is determined primarily by energy transfer from the sun at and near the Earth's surface, and fluctuations in solar output may have contributed to large changes in the Earth's climate in the past.
6.2	13.12.5 Explain how large-scale, long-term equilibrium can accommodate small-scale changes.
1.2, 2.2, 2.3, 6.1	13.12.6 Investigate and describe how elements necessary for life on Earth pass through both living and non-living cycles in a series of changes that form a global system.
3.1, 3.2	13.12.7 Compare and contrast the relationships between the **greenhouse effect** and the idea of global warming.
5.1	13.12.8 Model and explain how the energy that propels the Earth's lithosphere plates is dominantly a result of nuclear processes deep in the Earth.
2.3, 3.2, 5.2, 6.2, 7.5, 9.2, 9.3, 9.4, 9.5, 10.1, 12.1	15.12.1 Investigate and describe how changes in an ecosystem can affect **bio-diversity** and bio-diversity contributes to an ecosystem's stability.
2.2, 3.2, 6.2, 7.5, 9.4, 9.5, 10.1, 10.2	15.12.2 Investigate and describe how ecosystems change or remain the same in response to different kinds of influences.
2.2, 7.2	15.12.3 Investigate and describe how materials and energy are cycled and recycled through ecosystems via pathways known as food webs.

Performance Indicators	Nevada Science Academic Standards
1.3, 2.1, 2.2, 5.1, 5.2, 6.2, 8.1, 9.1, 9.2, 9.4	15.12.4 Describe the unique geologic, hydrologic, climatic, and biological characteristics of Nevada's **bioregions.** (e.g., Northern NV cold desert, Southern low warm desert, Mountain).
2.1, 5.1, 5.2, 5.3, 6.2, 6.3, 8.1, 9.1, 9.3, 9.4	16.12.1 Evaluate the consequences of changing patterns of resources use.
2.3, 2.4, 4.1, 4.2, 5.1, 5.2, 5.3, 6.3, 7.1, 7.7, 8.1, 8.3, 9.4, 9.5, 12.1	16.12.3 Investigate and describe the career opportunities associated with the study, exploration, extraction, utilization, protection, and restoration of natural resources.
1.3, 2.3, 2.4, 3.2, 4.1, 5.2, 6.2, 7.3, 7.5, 9.3, 10.1, 10.2	16.12.4 Analyze and describe the limitations of the Earth's ability to respond to stresses produced by human or natural activities.
1.3, 2.3, 3.2, 5.2, 5.3, 6.2, 7.5, 8.1, 9.3, 9.4, 10.2	16.12.5 Analyze and evaluate the effects that increases in human populations can cause (e.g., resource depletion and environmental degradation).
2.1, 2.3, 5.3, 6.2, 7.6, 8.1, 9.1, 9.3, 9.4	17.12.1 Analyze and evaluate how consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.
2.3, 3.1, 3.2, 6.2	17.12.2 Investigate and describe how human actions may impact the dynamic equilibrium of global systems (e.g., global warming, ozone depletion).
2.2, 3.1, 3.2, 5.2, 9.4, 10.1	17.12.3 Explain that there is scientific uncertainty regarding many environmental issues.
3.1, 3.2, 4.1, 4.2, 5.2, 5.3, 6.2, 6.3, 7.3, 9.4	17.12.4 Evaluate and describe actions which affect the global environment in terms of trade-offs that may have effects on local environments or economics.
14.1, 14.2	18.12.1 Explain that the scientific way of knowing uses a critique and consensus process (e.g., peer review, openness to criticism, logical argument, skepticism).
2.1, 3.1, 3.2, 4.1, 4.2, 5.2, 5.3, 6.2, 9.4	18.12.2 Investigate and explain how research emphasis is influenced by economic and public policy.
3.1, 3.2, 6.2	18.12.3 Investigate and explain how scientific innovations that were originally challenged are now widely accepted.
2.1, 3.1, 3.2, 9.4	18.12.4 Explain that scientists work with others to resolve differences in interpretation of observations.
1.3, 3.1, 3.2, 5.2	18.12.5 Explain that technological problems create a demand for new scientific knowledge and new technologies which make it possible for scientists to extend their research in new ways or to undertake entirely new lines of research.
1.3, 3.1, 3.2, 5.2, 6.2, 10.1, 10.2	18.12.6 Explain that scientific knowledge builds on previous information, and rarely are entire theories completely discarded in favor of new ones.
3.1, 3.2, 9.4	18.12.7 Explain that scientists have ethical procedures, violations of which have consequences.
2.4, 3.1, 3.2	19.12.1 Identify and determine the credibility of sources of information based on the techniques used to gather that information.
1.3, 3.1, 3.2, 5.2, 7.6, 9.3, 9.4	19.12.2 Apply cost benefit and risk analyses in decision-making processes.
2.1, 2.3, 2.4, 3.1, 3.2, 4.1, 5.2, 6.2	19.12.5 Determine the limits of generalizations, assumptions, analogies, and models.
2.3, 6.2	20.12.1 Use mathematical symbols and formulas to express relationships that behave in the same ways as the objects or processes under investigation.
2.1, 2.3, 3.1, 3.2, 5.2	20.12.2 Use models to identify and predict cause-effect relationships (e.g., effect of temperature on gas volume, effect of carbon dioxide level on the greenhouse effect).
2.2	20.12.3 Identify and describe how systems are often different from their components, (e.g., aquaria or automobiles).
2.4, 6.4, 7.7, 9.4, 9.5, 14.1	20.12.4 Compare groups of data, taking into account both percentages and actual numbers.
2.3, 5.2, 9.4	20.12.5 Identify the type of hazard, estimate the extent and consequences of exposure, and determine the options for reducing or eliminating risks.

Performance Indicators	Nevada Science Academic Standards
3.1, 3.2, 12.1, 14.1, 14.2, 14.3	21.12.1 Demonstrate curiosity, honesty, and skepticism in doing science.
2.1, 3.1, 3.2, 9.4	21.12.3 Evaluate multiple explanations for the same evidence.
2.4, 3.2, 6.4, 7.7, 9.5	23.12.6 Select samples by some random system to avoid bias.
2.4, 3.2, 5.2, 14.1, 14.3, 14.6	24.12.1 Demonstrate personal responsibility for using safety equipment and observing all safety standards.
2.4, 12.1	24.12.2 Use the information found in materials safety data sheets to handle, store, and dispose of chemicals properly.
2.4, 3.2, 6.4, 7.7, 9.5	24.12.4 Maintain a permanent record of procedures, data, analyses, decisions, and understandings of scientific investigations.
12.1	24.12.6 Carry out an independent scientific investigation.

Crosswalk of Natural Resource and Wildlife Management and English Language Arts

Performance Indicators	English Language Arts Academic Standards
3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	1.12.3 Apply knowledge of Anglo-Saxon-, Greek-, and Latin-derived roots and affixes to determine the meaning of unknown vocabulary across the curriculum.
1.1, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.2, 5.3, 6.1, 6.3, 6.4, 7.1, 7.3, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	2.12.1 Refine pre-reading strategies such as accessing prior knowledge, predicting, previewing, and setting a purpose to ensure comprehension.
14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	2.12.2 Use specific repair strategies such as summarizing, clarifying ambiguities, and consulting other sources.
1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	4.12.3 Locate, organize, interpret, and synthesize information in multiple primary and secondary sources to support ideas and positions.
1.3, 2.1, 2.3, 2.4, 3.1, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	4.12.5 Analyze how historical and cultural contexts influence the content and validity of informational texts.
5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	4.12.6 Read and apply multi-step directions to perform complex procedures and tasks.
9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	5.12.2 Produce subject-specific technical writing, such as instructions for a shop project or field reports for science.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	5.12.5 Write summaries or **abstracts** that distill large amounts of information into clear, concise **prose**.
3.1, 3.2, 4.1, 4.2, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	6.12.2 Organize ideas in compositions by selecting and applying structures such as comparison/ contrast or cause/effect, which enhance the central idea, theme, or purpose.
2.2, 2.3, 2.4, 3.1, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	6.12.3 Write compositions that present complex ideas in a sustained and compelling manner.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.3, 9.4, 9.5, 10.1, 10.2, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	6.12.5 Edit for use of standard English.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	6.12.7 Share final drafts with a designated audience.
2.2, 2.3, 2.4, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	7.12.1 Apply the rules of usage, grammar, and capitalization with few significant errors; use modifiers, parallel structure, and **subordination** correctly in writing.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	7.12.3 Use rules of punctuation; manipulate **conventions** for emphasis in writing.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2,	7.12.4 Use rules of capitalization.

Performance Indicators	English Language Arts Academic Standards
6.3, 6.4, 7.1, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	7.12.5 Demonstrate conventional spelling.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.2, 5.3, 6.1, 6.3, 6.4, 7.2, 7.3, 7.5, 7.6, 7.7, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 6.1, 6.3, 6.4	9.12.2 Make formal oral or multi-media presentations, using vocabulary and public speaking techniques appropriate to audience and purpose.
2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 9.4, 10.1, 10.2, 11.1, 12.1, 13.1, 14.1, 14.2, 14.3, 14.4, 14.5, 14.7, 14.8, 14.9	10.12.1 Participate in problem-solving conversations or group discussions by identifying, synthesizing, and evaluating data.