

Equine Science and Management

Subject Code: 010935

Course & Unit Descriptions

Course Description:

A laboratory-based course designed to introduce learners to responsible equine management principals and routine husbandry practices in relation to equine behavior methodology, business management, and legal compliance. Learners will demonstrate an understanding of the equine anatomy and describe the physiology and function in its biological systems. Learners will apply knowledge of health and nutrition when designing preventative health care plans, breeding plans, and feed management programs. Safe handling, grooming, training, equipment selection/maintenance/use and emergency care techniques are developed and applied. Learners will evaluate responsible stewardship practices and develop production management strategies that emphasize the industries goals through good reproductive decision-making.

Unit: Equine Care & Health

In this unit, students will be able to identify, prevent and control common diseases and parasites. Students will be able to administer a preventative health care plan and provide basic first aid and wound care. Students will evaluate proper hoof care and shoeing. All procedures will be carried out with safety for horse and handler at all times.

Benchmark: 1.3 Care and Management

Level 1: none

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.02 Recognize and determine the biotic and abiotic factors that impact the animals' environment (e.g., air, ventilation)
- 1.3.03 Describe and implement scientific concepts of animal welfare
- 1.3.05 Estimate carrying capacity of the environment and its impact on animal health
- 1.3.07 Evaluate and perform animal care procedures during and following parturition (e.g., navel cord, afterbirth, colostrums, orphaned animals)
- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)
- 1.3.09 Perform sanitation and disinfection procedures for care and management of animal

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 1.4 Animal Health

Level 1:

Level 2: Evaluate animal condition and implement treatment and maintenance options for species-specific diseases/disorders

Indicators

- 1.4.01 Evaluate general condition of animal using diagnostic methods (e.g., visual exam, physical exam, vital signs)
- 1.4.02 Describe diseases/disorders and their symptoms that are caused by microorganisms, parasites, genetic defects and environmental factors
- 1.4.03 Identify signs of pain, distress, disease and allergic reactions
- 1.4.04 Collect specimens to perform urinalysis, hematology, cytology, skin scraping and fecal sample examinations
- 1.4.05 Produce diagnostic radiographs using x-ray equipment and image receptors
- 1.4.06 Apply principles of image physics and perform ultrasonography techniques
- 1.4.07 Identify gastrointestinal ailments, neuromuscular disorders, respiratory diseases, blood disorders, and bone/joint problems
- 1.4.08 Monitor and evaluate the quality of an animal's habitat (natural or artificial) and implement corrective methods as needed
- 1.4.09 Identify types of immunity and immune responses and maintain animal health through immunization
- 1.4.10 Administer care to animals in case of accident or illness
- 1.4.11 Classify pharmaceutical drugs and describe general characteristics of each type
- 1.4.12 Describe the routes of administration for medications (e.g., intranasal, oral, IV, subQ, IM) and the process of drug absorption, distribution, metabolism, withdrawal and excretion
- 1.4.13 Calculate pharmaceutical dosages/mixtures, administer drug treatments and monitor potential problems associated with incorrect administration and common adverse effects
- 1.4.14 Recognize normal and abnormal dental structures and conditions, identify teeth and use dental terminology to accurately chart dental morphology
- 1.4.18 Explain zoonoses and communicable diseases common to humans and animals

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the characteristics of life as indicated by cellular processes and describe the process of cell division and development. (Life Sciences B, 9-10)

Benchmark: 4.1 Safety Procedures

Level 2: Follow safety procedures in specific situations with specialized tools and equipment, evaluate situation and take corrective action

Indicators

- 4.1.01 Demonstrate knowledge of safety rules and regulations
- 4.1.02 Interpret safety signs and symbols
- 4.1.03 Model safe attitudes and behaviors (e.g., lifting, climbing)
- 4.1.04 Identify safety hazards and take corrective measures
- 4.1.05 Use safety equipment in accordance with established procedures
- 4.1.06 Follow established procedures for the administration of first aid and contact emergency medical personnel when necessary

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Benchmark: 4.2 Stationary and Mobile Equipment Maintenance

Level 2: Inspect and maintain specialized machinery and equipment according to schedule

Indicators

- 4.2.01 Perform a machine condition inspection
- 4.2.02 Lubricate machinery and equipment
- 4.2.03 Ensure presence and function of safety systems and hardware
- 4.2.05 Perform machine adjustments (e.g., belts, clippers, drive chains)
- 4.2.08 Maintain machinery, equipment, instruments and facility cleanliness, appearance, and safety
- 4.2.11 Calibrate metering, monitoring, and sensing equipment
- 4.2.12 Inspect and maintain tooling

Academic Standards

- English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 4.3 Equipment Operation

Level 2: Inspect and safely operate specialized equipment with some limitations to adjustments and functions

Indicators

- 4.3.01 Follow manufacturer's recommended operating procedures and adjustment specifications

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 5.10 Solid Waste and Renewable Resource Management

Level 2: Control and process solid waste using available and alternative technology

Indicators

- 5.10.05 Describe and monitor solid waste disposal procedures (e.g., landfills, lagoon, run-off)
- 5.10.06 Describe and implement waste management methods (e.g., composting facility, waste incineration, recycling)
- 5.10.07 Explain control processes and potential use for waste byproducts (e.g., landfill gas, sludge, manure, methane)

Academic Standards

- English: Use multiple resources to enhance comprehension of vocabulary. (Vocabulary F, 8-10; Vocabulary E, 11-12)
- Math: Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision. (Measurement E, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 5.13 Hazardous Materials Management

Level 2: Follow handling, storage, and recording procedures for hazardous materials

Indicators

- 5.13.01 Describe health and safety practices to reduce risks from hazardous materials (i.e., MSDS forms, employer notification forms, personal protective equipment)

Academic Standards

- English: Apply reading comprehension strategies to understand grade-appropriate text. (Reading Process A, 8-10; Reading Process A, 11-12)
- Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 5.4 Contaminants

Level 2: Assess affected area, determine the source and type of contaminant, and respond appropriately

Indicators

- 5.4.01 Determine types, sources and impact of natural and man-made contaminants (e.g., manure; wastewater; soil; agricultural, residential and industrial chemicals)
- 5.4.02 Explain and implement programs and policies related to contaminants
- 5.4.03 Identify, comply with and implement contaminant control, remediation and prevention practices (e.g., biological, radiological, sanitation, buffer strips for run-off)
- 5.4.04 Monitor, analyze and evaluate levels of contaminants from point source and non-point source

Academic Standards

- English: Use multiple resources to enhance comprehension of vocabulary. (Vocabulary F, 8-10; Vocabulary E, 11-12)
- Math: Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision. (Measurement E, 8-10)
- Science: Describe how human activities can impact the status of natural systems. (Life Sciences G, 9-10)
- Social Studies: Evaluate the consequences of geographic and environmental changes resulting from governmental policies and human modifications to the physical environment. (Geography B, 11-12)

Benchmark: 5.6 Emergency Response

Level 2: Simulate the appropriate response to an emergency situation

Indicators

- 5.6.02 Identify responses to emotional, physiological and environmental stress
- 5.6.04 Identify and contact local emergency response teams

Academic Standards

- English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)

Unit: Tack and its application

The learner will know proper selection, use and maintenance of tack, tools and equipment.

Benchmark: 4.1 Safety Procedures

Level 2: Follow safety procedures in specific situations with specialized tools and equipment, evaluate situation and take corrective action

Indicators

- 4.1.01 Demonstrate knowledge of safety rules and regulations
- 4.1.02 Interpret safety signs and symbols
- 4.1.03 Model safe attitudes and behaviors (e.g., lifting, climbing)
- 4.1.04 Identify safety hazards and take corrective measures
- 4.1.05 Use safety equipment in accordance with established procedures

Academic Standards

English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Benchmark: 4.2 Stationary and Mobile Equipment Maintenance

Level 2: Inspect and maintain specialized machinery and equipment according to schedule

Indicators

- 4.2.03 Ensure presence and function of safety systems and hardware
- 4.2.08 Maintain machinery, equipment, instruments and facility cleanliness, appearance, and safety
- 4.2.10 Conduct preventative maintenance and identify causes of malfunctions and failures

Academic Standards

English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)

Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 4.3 Equipment Operation

Level 2: Inspect and safely operate specialized equipment with some limitations to adjustments and functions

Indicators

- 4.3.02 Describe function, limitations, and proper use of equipment, equipment controls and instrumentation
- 4.3.03 Perform pre-operation inspection and adjustments
- 4.3.06 Perform post-operating inspection and adjustments

Academic Standards

English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Unit: Training

The learner will develop riding techniques, understand and modify Equine behavior and use, and apply action and application of aids. Advanced students will introduce young horses to training and finish training the green horse

Benchmark: 1.3 Care and Management

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.03 Describe and implement scientific concepts of animal welfare
- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)

Academic Standards

Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)

Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 1.6 Animal Behavior

Level 2: Apply management practices to animals that result in desired behavioral change

Indicators

- 1.6.01 Describe the adaptations and special senses (e.g., sight, hearing, smell, touch) of animals and how they contribute to animal behavior
- 1.6.02 Describe and identify innate animal behavioral traits (e.g., protection, ingestion, homing, sleeping, grooming, elimination, sexual, care-giving, combative, evasive, breed differences)
- 1.6.03 Manipulate an animal's behavioral and natural tendencies through appropriate management practices
- 1.6.04 Determine how animals learn (simple and complex) and how interventions can be employed to reach a desired behavior
- 1.6.05 Identify social relationships involved in behavioral adjustment and/or adaptation (animal to animal interaction, human to animal interaction)
- 1.6.06 Describe the animal's vocal, visual and chemical means of communication and interpret the intent
- 1.6.07 Identify behavioral abnormalities and their cause(s) and employ corrective action
- 1.6.08 Identify and employ techniques to train and discipline animals for predictive behavior
- 1.6.09 Handle and move animals (e.g., training, restraint, confinement) with regard for safety of animals and handlers

Academic Standards

Science: Describe how human activities can impact the status of natural systems. (Life Sciences G, 9 -10)

Benchmark: 4.1 Safety Procedures

Level 2: Follow safety procedures in specific situations with specialized tools and equipment, evaluate situation and take corrective action

Indicators

- 4.1.01 Demonstrate knowledge of safety rules and regulations

Academic Standards

English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Benchmark: 4.2 Stationary and Mobile Equipment Maintenance

Level 2: Inspect and maintain specialized machinery and equipment according to schedule

Indicators

- 4.2.08 Maintain machinery, equipment, instruments and facility cleanliness, appearance, and safety
- 4.2.10 Conduct preventative maintenance and identify causes of malfunctions and failures

Academic Standards

English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)

Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 4.3 Equipment Operation

Level 2: Inspect and safely operate specialized equipment with some limitations to adjustments and functions

Indicators

- 4.3.01 Follow manufacturer's recommended operating procedures and adjustment specifications
- 4.3.03 Perform pre-operation inspection and adjustments
- 4.3.06 Perform post-operating inspection and adjustments

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Unit: Nutrition

The learner will understand the equine digestive system, identify proper feedstuffs, analyze and formulate rations for different ages and classes of horses.

Benchmark: 1.1 Nutrition

Level 2: Prepare/formulate and administer a ration and evaluate its effects on animals

Indicators

- 1.1.01 Identify types, composition, quality and compatibility of feeds, feed additives, and feed byproducts
- 1.1.02 Determine the role of nutrients and the nutritional requirements (matter and energy) for different life processes of the animal (e.g., maintenance/homeostasis, growth, reproduction, lactation)
- 1.1.03 Analyze nutritional content and quality of feeds (e.g., fiber, sodium, proteins, carbohydrates, lipids)
- 1.1.04 Identify and treat major nutrient deficiency and toxicity symptoms
- 1.1.05 Describe possible toxins, pathogens and contaminants found in feedstuffs (biological and nonbiological) and their impact on animals
- 1.1.06 Determine feed efficiency in relation to cost and availability of feeds
- 1.1.07 Formulate, prepare, and investigate rations and diets for production, specialty markets, and special diets (e.g., natural, organic, liver diet, heart diet, kidney diet)
- 1.1.08 Select and implement feeding and watering practices and systems for varying populations and purposes (e.g., reduce waste)
- 1.1.09 Evaluate/monitor performance of feeding systems and programs
- 1.1.10 Determine the ecological relationships between feed/agronomic production systems and feed quality

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions. (Measurement F, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 1.2 Body Systems

Level 2: Describe the interrelationship of the animal body systems

Indicators

- 1.2.01 Identify external anatomical parts and functions
- 1.2.02 Identify the anatomy and describe the physiology of the digestive systems

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)

Benchmark: 1.3 Care and Management

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 1.4 Animal Health

Level 2: Evaluate animal condition and implement treatment and maintenance options for species-specific diseases/disorders

Indicators

- 1.4.01 Evaluate general condition of animal using diagnostic methods (e.g., visual exam, physical exam, vital signs)
- 1.4.02 Describe diseases/disorders and their symptoms that are caused by microorganisms, parasites, genetic defects and environmental factors
- 1.4.03 Identify signs of pain, distress, disease and allergic reactions
- 1.4.07 Identify gastrointestinal ailments, neuromuscular disorders, respiratory diseases, blood disorders, and bone/joint problems
- 1.4.08 Monitor and evaluate the quality of an animal's habitat (natural or artificial) and implement corrective methods as needed
- 1.4.09 Identify types of immunity and immune responses and maintain animal health through immunization
- 1.4.10 Administer care to animals in case of accident or illness
- 1.4.14 Recognize normal and abnormal dental structures and conditions, identify teeth and use dental terminology to accurately chart dental morphology

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the characteristics of life as indicated by cellular processes and describe the process of cell division and development. (Life Sciences B, 9-10)

Benchmark: 5.4 Contaminants

Level 2: Assess affected area, determine the source and type of contaminant, and respond appropriately

Indicators

- 5.4.04 Monitor, analyze and evaluate levels of contaminants from point source and non-point source

Academic Standards

- English: Use multiple resources to enhance comprehension of vocabulary. (Vocabulary F, 8-10; Vocabulary E, 11-12)
- Math: Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision. (Measurement E, 8-10)
- Science: Describe how human activities can impact the status of natural systems. (Life Sciences G, 9-10)

Social Studies: Evaluate the consequences of geographic and environmental changes resulting from governmental policies and human modifications to the physical environment. (Geography B, 11-12)

Unit: Stable/ Business Management Practices

Learners will understand and apply basic management practices as they apply to the efficient operation of various types of equine businesses.

Benchmark: 1.3 Care and Management

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.02 Recognize and determine the biotic and abiotic factors that impact the animals' environment (e.g., air, ventilation)
- 1.3.03 Describe and implement scientific concepts of animal welfare
- 1.3.04 Apply and record animal identification procedures and requirements (e.g., tagging, tattooing, ear notching, banding, branding, painting, electronic microchip implanting)
- 1.3.05 Estimate carrying capacity of the environment and its impact on animal health
- 1.3.06 Explain predator/prey relationships (e.g., predator control, species propagation, invasive species control) and implement measures to control predators when necessary
- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)
- 1.3.09 Perform sanitation and disinfection procedures for care and management of animal

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 3.1 Marketing

Level 2: Develop and market a product or service to maximize profits and optimize cost

Indicators

- 3.1.01 Select target market and consumers
- 3.1.02 Research products and service design(s) and determine the technical feasibility of new products
- 3.1.03 Conduct market research and analysis
- 3.1.04 Select channels of distribution
- 3.1.05 Set prices using supply and demand curves and commodity and non-commodity pricing
- 3.1.06 Identify and evaluate methods of marketing products and services
- 3.1.07 Promote products and services
- 3.1.08 Develop public relations campaigns
- 3.1.10 Identify and evaluate purchase options (e.g., finance options, lease, cash, rental)

Academic Standards

- English: Produce functional documents that report, organize and convey information and ideas accurately, foresee readers' problems or misunderstandings and that include formatting techniques that are user friendly. (Writing Applications C, 11-12)
- Math: Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations. (Algebra D, 8-10)
- Social Studies: Analyze how scarcity of productive resources affects supply, demand, inflation and economic choices. (Economics A, 11-12)

Benchmark: 3.10 Business Regulation, Law and Related Issues

Level 2: Determine the impact of government regulations and societal issues on an environmental project or the performance of a business enterprise

Indicators

- 3.10.02 Explain the purpose and impact of government regulations
- 3.10.03 Identify local, state and federal regulations relative to compliance
- 3.10.05 Adhere to business-related documentation requirements

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)
- Social Studies: Evaluate the consequences of geographic and environmental changes resulting from governmental policies and human modifications to the physical environment. (Geography B, 11-12)

Benchmark: 3.11 Research and Analysis

Level 2: Conduct a problem-based study applying scientific methodology and using descriptive statistics to communicate and support predictions and conclusions

Indicators

(no indicators chosen)

Academic Standards

- English: Formulate open-ended research questions suitable for inquiry and investigation and adjust questions as necessary while research is conducted. (Research A, 8-10; Research A, 11-12)
- Math: Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations. (Algebra D, 8-10)
- Science: Participate in and apply the processes of scientific investigation to create models and to design, conduct, evaluate and communicate the results of these investigations. (Scientific Inquiry A, 9-10)

Benchmark: 3.2 Sales and Customer Service

Level 2: Use sales techniques to close the sale of a product/service and handle complex customer issues

Indicators

- 3.2.04 Prospect for new customers
- 3.2.05 Discuss and evaluate the appropriateness of different sales techniques/approaches in specific situations
- 3.2.06 Develop and conduct sales presentation
- 3.2.07 Utilize suggestive selling and selling up techniques
- 3.2.08 Build and develop customer relationships
- 3.2.09 Apply appropriate questioning techniques to determine client needs and wants
- 3.2.11 Complete sales transactions and close-out procedures (e.g., handle money, operate cash register, scan bar codes, record sales, write invoices/orders)
- 3.2.13 Handle customer complaints

Academic Standards

- English: Use a variety of strategies to enhance listening comprehension. (Communication A, 8-10; Communication A, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)

Benchmark: 3.3 Management

Level 2: Analyze performance of an enterprise and reallocate resources to achieve goals

Indicators

- 3.3.01 Evaluate management styles
- 3.3.02 Explain the characteristics of business plans
- 3.3.03 Develop business goals/objectives and mission statement
- 3.3.04 Identify organizational structures of businesses
- 3.3.05 Plan operational capacity
- 3.3.06 Develop a continuous-improvement management program
- 3.3.07 Establish business relationships
- 3.3.08 Document business activities
- 3.3.09 Track performance of business plan
- 3.3.11 Analyze operating results in relation to budget/industry
- 3.3.12 Perform human-resource management functions (e.g., recruit, select, evaluate, terminate employees)
- 3.3.13 Identify crisis management techniques

Academic Standards

- English: Analyze the features and structures of documents and critique them for their effectiveness. (Reading: Informational Text A, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Social Studies: Identify factors which inhibit or spur economic growth and cause expansions or recessions. (Economics B, 11-12)

Benchmark: 3.4 Finance

Level 2: Analyze fiscal status of an enterprise and reallocate resources to maintain/increase profitability

Indicators

- 3.4.01 Identify sources of capital and explain considerations in selecting among them
- 3.4.02 Analyze investment options (e.g., buy, lease, finance, risk)
- 3.4.03 Evaluate credit uses and options
- 3.4.04 Evaluate and select banking services
- 3.4.05 Budget resources (e.g., capital, human, financial, time)
- 3.4.06 Manage assets for optimum utilization
- 3.4.07 Manage risk of liabilities
- 3.4.08 Maintain financial records and interpret and analyze financial statements
- 3.4.09 Determine cost of doing business (e.g., personnel, depreciation, materials, freight, quality)
- 3.4.10 Calculate and analyze return on investment (ROI)
- 3.4.11 Forecast future budgetary needs

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Social Studies: Analyze how scarcity of productive resources affects supply, demand, inflation and economic choices. (Economics A, 11-12)

3.5 Purchasing and Inventory

Level 2: Manage inventory based on budgeting and sales forecasting

Indicators

- 3.5.01 Explain the nature and scope of purchasing
- 3.5.02 Manage the bid process in purchasing
- 3.5.03 Evaluate and select vendors
- 3.5.04 Discuss types of inventory and evaluate inventory control systems (e.g., Last In, First Out [LIFO]; First In, First Out [FIFO]; Just-In-Time [JIT])
- 3.5.05 Record inventory usage
- 3.5.06 Calculate costs of carrying and not carrying inventory

Academic Standards

- English: Use multiple resources to enhance comprehension of vocabulary. (Vocabulary F, 8-10; Vocabulary E, 11-12)
- Math: Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions. (Measurement F, 8-10)

Benchmark: 3.6 Information Management

Level 2: Integrate software applications and use multiple software options to create a product, document or presentation

Indicators

- 3.6.01 Utilize technology to maintain and monitor business records
- 3.6.02 Conduct research using the Internet
- 3.6.03 Create and utilize documents using word processors, spreadsheets, databases and electronic mail
- 3.6.04 Conduct oral/visual presentation using presentation software
- 3.6.06 Utilize personal information management/productivity applications
- 3.6.08 Adhere to common security guidelines for technology

Academic Standards

- English: Prepare writing for publication that follows an appropriate format and uses a variety of techniques to enhance the final product. (Writing Process F, 11-12)
- Math: Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations. (Algebra D, 8-10)

Benchmark: 3.7 Communication Skills

Level 2: Conduct a business meeting using decision-making techniques

Indicators

- 3.7.03 Develop and deliver formal and informal presentations
- 3.7.09 Select and use appropriate channel for workplace communication
- 3.7.10 Practice etiquette when using communication techniques

Academic Standards

- English: Produce functional documents that report, organize and convey information and ideas accurately, foresee readers' problems or misunderstandings and that include formatting techniques that are user friendly. (Writing Applications C, 11-12)
- Math: Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations. (Algebra D, 8-10)
- Social Studies: Evaluate the reliability and credibility of sources. (Social Studies Skills and Methods A, 9 - 10)

Benchmark: 3.8 Business Leadership

Level 2: Use multiple leadership concepts to change situations and enhance effectiveness in the change process

Indicators

- 3.8.01 Identify the purpose of leadership, the ethical dimensions of leadership and the relationship between leaders and team members
- 3.8.02 Identify leadership styles and traits of leaders
- 3.8.03 Identify the impact of individual differences and different situations on the practice of leadership
- 3.8.04 Assess strengths and weaknesses of leaders and team members and employ team-building techniques
- 3.8.06 Think critically and use problem-solving skills to analyze complex and diverse concepts
- 3.8.07 Use reasoning, judgment and imagination to create new possibilities in situations
- 3.8.08 Manage time with organizational tools and prioritize objectives, responsibilities and tasks
- 3.8.09 Apply conflict-resolution skills
- 3.8.10 Recognize/reward others for their efforts and contributions
- 3.8.11 Develop relationships with peer groups, support services, and professional organizations

Academic Standards

- English: Use a variety of strategies to enhance listening comprehension. (Communication A, 8-10; Communication A, 11-12)
- Math: Locate and interpret mathematical information accurately, and communicate ideas, processes and solutions in a complete and easily understood manner. (Mathematical Processes H, 8-10)
- Social Studies: Critique data and information to determine the adequacy of support for conclusions. (Social Studies Skills and Methods B, 11-12)

Benchmark: 3.9 Emotional Intelligence

Level 2: Exhibit techniques to control emotional reactions to people and situations

Indicators

- 3.9.03 Manage personal emotions, behavior and appearance to maintain professionalism
- 3.9.04 Describe and exhibit appropriate ethical behavior
- 3.9.05 Accept and use constructive feedback to improve work habits
- 3.9.06 Employ appropriate coping skills to prevent/handle workplace conflicts
- 3.9.08 Foster positive working relationships

Academic Standards

- English: Use a variety of strategies to enhance listening comprehension. (Communication A, 8-10; Communication A, 11-12)
- Social Studies: Analyze how issues may be viewed differently by various cultural groups. (People in Societies A, 11-12)

Benchmark: 4.1 Safety Procedures

Level 2: Follow safety procedures in specific situations with specialized tools and equipment, evaluate situation and take corrective action

Indicators

- 4.1.01 Demonstrate knowledge of safety rules and regulations
- 4.1.02 Interpret safety signs and symbols
- 4.1.03 Model safe attitudes and behaviors (e.g., lifting, climbing)
- 4.1.04 Identify safety hazards and take corrective measures
- 4.1.05 Use safety equipment in accordance with established procedures
- 4.1.06 Follow established procedures for the administration of first aid and contact emergency medical personnel when necessary

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Benchmark: 4.2 Stationary and Mobile Equipment Maintenance

Level 2: Inspect and maintain specialized machinery and equipment according to schedule

Indicators

- 4.2.01 Perform a machine condition inspection
- 4.2.02 Lubricate machinery and equipment
- 4.2.03 Ensure presence and function of safety systems and hardware
- 4.2.04 Service basic electrical systems (e.g., fuses and bulbs)
- 4.2.05 Perform machine adjustments (e.g., belts, clippers, drive chains)
- 4.2.06 Service filtration systems
- 4.2.07 Identify, select and maintain fluid levels
- 4.2.08 Maintain machinery, equipment, instruments and facility cleanliness, appearance, and safety
- 4.2.09 Inspect and maintain fluid conveyance and storage components (e.g., hoses and lines, valves, nozzles)
- 4.2.10 Conduct preventative maintenance and identify causes of malfunctions and failures
- 4.2.11 Calibrate metering, monitoring, and sensing equipment
- 4.2.12 Inspect and maintain tooling
- 4.2.13 Maintain lifting equipment (e.g., cranes, chains, slings)

Academic Standards

- English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 4.3 Equipment Operation

Level 2: Inspect and safely operate specialized equipment with some limitations to adjustments and functions

Indicators

- 4.3.01 Follow manufacturer's recommended operating procedures and adjustment specifications
- 4.3.02 Describe function, limitations, and proper use of equipment, equipment controls and instrumentation
- 4.3.03 Perform pre-operation inspection and adjustments
- 4.3.04 Perform appropriate start-up, operating and shut-down procedures
- 4.3.05 Identify, select and exhibit the desired application of hand and power tools
- 4.3.06 Perform post-operating inspection and adjustments

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 5.10 Solid Waste and Renewable Resource Management

Level 2: Control and process solid waste using available and alternative technology

Indicators

- 5.10.01 Collect, analyze, and treat waste materials (e.g., mortalities, manure, garbage)
- 5.10.02 Identify the risks associated with solid waste accumulation, utilization and disposal
- 5.10.03 Determine acceptable site for disposal of solid waste
- 5.10.05 Describe and monitor solid waste disposal procedures (e.g., landfills, lagoon, run-off)
- 5.10.10 Determine solid waste volume generated by an operation or facility

Academic Standards

- English: Use multiple resources to enhance comprehension of vocabulary. (Vocabulary F, 8-10; Vocabulary E, 11-12)
- Math: Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision. (Measurement E, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 5.13 Hazardous Materials Management

Level 2: Follow handling, storage, and recording procedures for hazardous materials

Indicators

- 5.13.04 Demonstrate safe management, handling, disposal and/or recycling procedures for hazardous and regulated materials and hazardous waste

Academic Standards

- English: Apply reading comprehension strategies to understand grade-appropriate text. (Reading Process A, 8-10; Reading Process A, 11-12)
- Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 5.6 Emergency Response

Level 2: Simulate the appropriate response to an emergency situation

Indicators

- 5.6.01 Analyze factors that influence environmental conditions
- 5.6.02 Identify responses to emotional, physiological and environmental stress
- 5.6.03 Identify and implement various emergency response plans
- 5.6.04 Identify and contact local emergency response teams

Academic Standards

- English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)

Unit: Confirmation and Evaluation

Learners will apply proper conformation to evaluation of horses. Breed characteristics and standard show rules will be applied to evaluation and judging.

Benchmark: 1.2 Body Systems

Level 2: Describe the interrelationship of the animal body systems

Indicators

- 1.2.01 Identify external anatomical parts and functions
- 1.2.04 Identify the anatomy and describe the physiology of the skeletal systems
- 1.2.05 Identify the anatomy and describe the physiology of the musculature systems

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)

Benchmark: 1.3 Care and Management

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.01 Identify, classify, evaluate and select animal species and/or breeds
- 1.3.04 Apply and record animal identification procedures and requirements (e.g., tagging, tattooing, ear notching, banding, branding, painting, electronic microchip implanting)
- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 1.4 Animal Health

Level 2: Evaluate animal condition and implement treatment and maintenance options for species-specific diseases/disorders

Indicators

- 1.4.01 Evaluate general condition of animal using diagnostic methods (e.g., visual exam, physical exam, vital signs)
- 1.4.02 Describe diseases/disorders and their symptoms that are caused by microorganisms, parasites, genetic defects and environmental factors
- 1.4.03 Identify signs of pain, distress, disease and allergic reactions

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the characteristics of life as indicated by cellular processes and describe the process of cell division and development. (Life Sciences B, 9-10)

Benchmark: 2.3 Genetics

Level 2: Model the molecular basis of genetic transfer

Indicators

- 2.3.01 Predict and explain offspring genotypes and phenotypes using Mendel's Laws and Punnett Square

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)
- Science: Explain the genetic mechanisms and molecular basis of inheritance. (Life Sciences C, 9-10)

Unit: Reproduction

Learners will identify and describe the functions of the male and female reproductive tracts. Students will be able to prepare the mare and stallion for breeding and care for the mare during gestation and foaling.

Benchmark: 1.1 Nutrition

Level 2: Prepare/formulate and administer a ration and evaluate its effects on animals

Indicators

- 1.1.02 Determine the role of nutrients and the nutritional requirements (matter and energy) for different life processes of the animal (e.g., maintenance/homeostasis, growth, reproduction, lactation)

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions. (Measurement F, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 1.2 Body Systems

Level 2: Describe the interrelationship of the animal body systems

Indicators

- 1.2.10 Identify the anatomy and describe the physiology of the male and female reproductive systems
- 1.2.11 Identify the anatomy and describe the physiology of the endocrine systems
- 1.2.13 Identify the anatomy and describe the physiology of the mammary systems

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)

Benchmark: 1.3 Care and Management

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.01 Identify, classify, evaluate and select animal species and/or breeds
- 1.3.06 Explain predator/prey relationships (e.g., predator control, species propagation, invasive species control) and implement measures to control predators when necessary
- 1.3.07 Evaluate and perform animal care procedures during and following parturition (e.g., navel cord, afterbirth, colostrums, orphaned animals)
- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)
- 1.3.09 Perform sanitation and disinfection procedures for care and management of animal

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 1.4 Animal Health

Level 2: Evaluate animal condition and implement treatment and maintenance options for species-specific diseases/disorders

Indicators

- 1.4.01 Evaluate general condition of animal using diagnostic methods (e.g., visual exam, physical exam, vital signs)
- 1.4.02 Describe diseases/disorders and their symptoms that are caused by microorganisms, parasites, genetic defects and environmental factors
- 1.4.03 Identify signs of pain, distress, disease and allergic reactions
- 1.4.04 Collect specimens to perform urinalysis, hematology, cytology, skin scraping and fecal sample examinations

- 1.4.05 Produce diagnostic radiographs using x-ray equipment and image receptors
- 1.4.06 Apply principles of image physics and perform ultrasonography techniques
- 1.4.08 Monitor and evaluate the quality of an animal's habitat (natural or artificial) and implement corrective methods as needed
- 1.4.09 Identify types of immunity and immune responses and maintain animal health through immunization
- 1.4.10 Administer care to animals in case of accident or illness
- 1.4.11 Classify pharmaceutical drugs and describe general characteristics of each type
- 1.4.12 Describe the routes of administration for medications (e.g., intranasal, oral, IV, subQ, IM) and the process of drug absorption, distribution, metabolism, withdrawal and excretion
- 1.4.13 Calculate pharmaceutical dosages/mixtures, administer drug treatments and monitor potential problems associated with incorrect administration and common adverse effects

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the characteristics of life as indicated by cellular processes and describe the process of cell division and development. (Life Sciences B, 9-10)

Benchmark: 1.5 Population Management

Level 2: Develop, implement and evaluate a reproduction and/or population management plan

Indicators

- 1.5.01 Determine the factors that influence estrus, gestation and parturition and employ appropriate management practices
- 1.5.02 Evaluate and employ breeding methods (e.g., artificial insemination, embryo transfer, natural selection, selective breeding, invitro fertilization)
- 1.5.03 Practice ethical/responsible animal population management (e.g., spay, neuter, euthanasia, birth control, relocation, reintroduction, hunting)
- 1.5.04 Manipulate an animal's reproductive processes (e.g., sex-sorted semen, birth control, heat synchronization, nutritional flushing)
- 1.5.05 Select and implement reproductive management practices (e.g., male to female ratios, fertility, soundness for breeding, age and weight for breeding and timing, other requirements for breed and species integrity) and monitor embryos/fetuses

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Describe how human activities can impact the status of natural systems. (Life Sciences G, 9 -10)

Benchmark: 1.6 Animal Behavior

Level 2: Apply management practices to animals that result in desired behavioral change

Indicators

- 1.6.01 Describe the adaptations and special senses (e.g., sight, hearing, smell, touch) of animals and how they contribute to animal behavior
- 1.6.02 Describe and identify innate animal behavioral traits (e.g., protection, ingestion, homing, sleeping, grooming, elimination, sexual, care-giving, combative, evasive, breed differences)
- 1.6.03 Manipulate an animal's behavioral and natural tendencies through appropriate management practices
- 1.6.04 Determine how animals learn (simple and complex) and how interventions can be employed to reach a desired behavior
- 1.6.05 Identify social relationships involved in behavioral adjustment and/or adaptation (animal to animal interaction, human to animal interaction)

- 1.6.06 Describe the animal's vocal, visual and chemical means of communication and interpret the intent
- 1.6.07 Identify behavioral abnormalities and their cause(s) and employ corrective action
- 1.6.08 Identify and employ techniques to train and discipline animals for predictive behavior
- 1.6.09 Handle and move animals (e.g., training, restraint, confinement) with regard for safety of animals and handlers

Academic Standards

Science: Describe how human activities can impact the status of natural systems. (Life Sciences G, 9-10)

Benchmark: 2.3 Genetics

Level 2: Model the molecular basis of genetic transfer

Indicators

- 2.3.01 Predict and explain offspring genotypes and phenotypes using Mendel's Laws and Punnett Square
- 2.3.07 Discuss alternative types of gene expression (e.g., sex-limited, sex-linked, partial dominance, epistatic, pleiotropic)

Academic Standards

English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)

Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)

Science: Explain the genetic mechanisms and molecular basis of inheritance. (Life Sciences C, 9-10)

Benchmark: 4.1 Safety Procedures

Level 2: Follow safety procedures in specific situations with specialized tools and equipment, evaluate situation and take corrective action

Indicators

- 4.1.01 Demonstrate knowledge of safety rules and regulations
- 4.1.02 Interpret safety signs and symbols
- 4.1.03 Model safe attitudes and behaviors (e.g., lifting, climbing)
- 4.1.04 Identify safety hazards and take corrective measures
- 4.1.05 Use safety equipment in accordance with established procedures
- 4.1.06 Follow established procedures for the administration of first aid and contact emergency medical personnel when necessary

Academic Standards

English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Benchmark: 4.2 Stationary and Mobile Equipment Maintenance

Level 2: Inspect and maintain specialized machinery and equipment according to schedule

Indicators

- 4.2.01 Perform a machine condition inspection
- 4.2.02 Lubricate machinery and equipment
- 4.2.08 Maintain machinery, equipment, instruments and facility cleanliness, appearance, and safety
- 4.2.10 Conduct preventative maintenance and identify causes of malfunctions and failures
- 4.2.11 Calibrate metering, monitoring, and sensing equipment
- 4.2.12 Inspect and maintain tooling

Academic Standards

- English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 4.3 Equipment Operation

Level 2: Inspect and safely operate specialized equipment with some limitations to adjustments and functions

Indicators

- 4.3.01 Follow manufacturer's recommended operating procedures and adjustment specifications
- 4.3.02 Describe function, limitations, and proper use of equipment, equipment controls and instrumentation
- 4.3.03 Perform pre-operation inspection and adjustments
- 4.3.04 Perform appropriate start-up, operating and shut-down procedures
- 4.3.05 Identify, select and exhibit the desired application of hand and power tools
- 4.3.06 Perform post-operating inspection and adjustments

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 5.13 Hazardous Materials Management

Level 2: Follow handling, storage, and recording procedures for hazardous materials

Indicators

- 5.13.01 Describe health and safety practices to reduce risks from hazardous materials (i.e., MSDS forms, employer notification forms, personal protective equipment)

Academic Standards

- English: Apply reading comprehension strategies to understand grade-appropriate text. (Reading Process A, 8-10; Reading Process A, 11-12)
- Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Unit: Competition and Sales

Learners will be able to groom and condition horses for shows and sales. Students will be able to evaluate pedigrees and enter horses in events.

Benchmark: 1.1 Nutrition

Level 2: Prepare/formulate and administer a ration and evaluate its effects on animals

Indicators

- 1.1.02 Determine the role of nutrients and the nutritional requirements (matter and energy) for different life processes of the animal (e.g., maintenance/homeostasis, growth, reproduction, lactation)

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)

- Math: Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions. (Measurement F, 8-10)
- Science: Describe the finite nature of Earth's resources and those human activities that can conserve or deplete Earth's resources. (Earth and Space Sciences D, 9-10)

Benchmark: 1.2 Body Systems

Level 2: Describe the interrelationship of the animal body systems

Indicators

- 1.2.01 Identify external anatomical parts and functions
- 1.2.04 Identify the anatomy and describe the physiology of the skeletal systems
- 1.2.05 Identify the anatomy and describe the physiology of the musculature systems
- 1.2.06 Identify the anatomy and describe the physiology of the circulatory systems
- 1.2.08 Identify the anatomy and describe the physiology of the respiratory systems

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)

Benchmark: 1.3 Care and Management

Level 2: Describe comprehensive care practices for animals and apply advanced management procedures to select, handle, mark, and manage environmental conditions

Indicators

- 1.3.01 Identify, classify, evaluate and select animal species and/or breeds
- 1.3.03 Describe and implement scientific concepts of animal welfare
- 1.3.04 Apply and record animal identification procedures and requirements (e.g., tagging, tattooing, ear notching, banding, branding, painting, electronic microchip implanting)
- 1.3.08 Identify, evaluate and perform general animal care/welfare procedures based on animal's use, species and life stage (e.g., weaning, dehorning, castrating, trimming hooves, milking, weighing, grooming, dental cleaning, dental floating, nail trimming)
- 1.3.09 Perform sanitation and disinfection procedures for care and management of animal

Academic Standards

- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the structure and function of ecosystems and relate how ecosystems change over time. (Life Sciences F, 9-10)

Benchmark: 1.4 Animal Health

Level 2: Evaluate animal condition and implement treatment and maintenance options for species-specific diseases/disorders

Indicators

- 1.4.01 Evaluate general condition of animal using diagnostic methods (e.g., visual exam, physical exam, vital signs)
- 1.4.02 Describe diseases/disorders and their symptoms that are caused by microorganisms, parasites, genetic defects and environmental factors
- 1.4.03 Identify signs of pain, distress, disease and allergic reactions
- 1.4.04 Collect specimens to perform urinalysis, hematology, cytology, skin scraping and fecal sample examinations
- 1.4.05 Produce diagnostic radiographs using x-ray equipment and image receptors
- 1.4.06 Apply principles of image physics and perform ultrasonography techniques
- 1.4.07 Identify gastrointestinal ailments, neuromuscular disorders, respiratory diseases, blood disorders, and bone/joint problems

- 1.4.09 Identify types of immunity and immune responses and maintain animal health through immunization
- 1.4.10 Administer care to animals in case of accident or illness
- 1.4.11 Classify pharmaceutical drugs and describe general characteristics of each type
- 1.4.12 Describe the routes of administration for medications (e.g., intranasal, oral, IV, subQ, IM) and the process of drug absorption, distribution, metabolism, withdrawal and excretion
- 1.4.13 Calculate pharmaceutical dosages/mixtures, administer drug treatments and monitor potential problems associated with incorrect administration and common adverse effects
- 1.4.14 Recognize normal and abnormal dental structures and conditions, identify teeth and use dental terminology to accurately chart dental morphology

Academic Standards

- English: Apply knowledge of roots, affixes and phrases to aid understanding of content area vocabulary. (Vocabulary D, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Science: Explain the characteristics of life as indicated by cellular processes and describe the process of cell division and development. (Life Sciences B, 9-10)

Benchmark: 1.6 Animal Behavior

Level 2: Apply management practices to animals that result in desired behavioral change

Indicators

- 1.6.01 Describe the adaptations and special senses (e.g., sight, hearing, smell, touch) of animals and how they contribute to animal behavior
- 1.6.02 Describe and identify innate animal behavioral traits (e.g., protection, ingestion, homing, sleeping, grooming, elimination, sexual, care-giving, combative, evasive, breed differences)
- 1.6.03 Manipulate an animal's behavioral and natural tendencies through appropriate management practices
- 1.6.04 Determine how animals learn (simple and complex) and how interventions can be employed to reach a desired behavior
- 1.6.05 Identify social relationships involved in behavioral adjustment and/or adaptation (animal to animal interaction, human to animal interaction)
- 1.6.06 Describe the animal's vocal, visual and chemical means of communication and interpret the intent
- 1.6.07 Identify behavioral abnormalities and their cause(s) and employ corrective action
- 1.6.08 Identify and employ techniques to train and discipline animals for predictive behavior
- 1.6.09 Handle and move animals (e.g., training, restraint, confinement) with regard for safety of animals and handlers

Academic Standards

- Science: Describe how human activities can impact the status of natural systems. (Life Sciences G, 9 -10)

Benchmark: 3.1 Marketing

Level 2: Develop and market a product or service to maximize profits and optimize cost

Indicators

- 3.1.01 Select target market and consumers
- 3.1.03 Conduct market research and analysis
- 3.1.04 Select channels of distribution
- 3.1.05 Set prices using supply and demand curves and commodity and non-commodity pricing
- 3.1.06 Identify and evaluate methods of marketing products and services
- 3.1.07 Promote products and services
- 3.1.08 Develop public relations campaigns
- 3.1.09 Select and implement a marketing option (e.g., cash sales, hedge, speculate, options, forward contract, government programs)
- 3.1.10 Identify and evaluate purchase options (e.g., finance options, lease, cash, rental)

Academic Standards

- English: Produce functional documents that report, organize and convey information and ideas accurately, foresee readers' problems or misunderstandings and that include formatting techniques that are user friendly. (Writing Applications C, 11-12)
- Math: Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations. (Algebra D, 8-10)
- Social Studies: Analyze how scarcity of productive resources affects supply, demand, inflation and economic choices. (Economics A, 11-12)

Benchmark: 3.10 Business Regulation, Law and Related Issues

Level 2: Determine the impact of government regulations and societal issues on an environmental project or the performance of a business enterprise

Indicators

- 3.10.01 Explain the nature and appropriateness of different types of business contracts
- 3.10.03 Identify local, state and federal regulations relative to compliance
- 3.10.05 Adhere to business-related documentation requirements
- 3.10.06 Identify governmental agencies and non-governmental organizations that impact agricultural/environmental issues
- 3.10.07 Research history, politics and policies related to issues
- 3.10.08 Assess the impact of issues affecting the industry and recommend solutions

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Construct convincing arguments based on analysis of data and interpretation of graphs. (Data Analysis F, 8-10)
- Social Studies: Evaluate the consequences of geographic and environmental changes resulting from governmental policies and human modifications to the physical environment. (Geography B, 11-12)

Benchmark: 3.2 Sales and Customer Service

Level 2: Use sales techniques to close the sale of a product/service and handle complex customer issues

Indicators

- 3.2.01 Identify key components to organize a sale
- 3.2.02 Develop sales goals and incentive programs
- 3.2.03 Forecast sales and delivery times
- 3.2.04 Prospect for new customers
- 3.2.05 Discuss and evaluate the appropriateness of different sales techniques/approaches in specific situations
- 3.2.06 Develop and conduct sales presentation
- 3.2.07 Utilize suggestive selling and selling up techniques
- 3.2.08 Build and develop customer relationships
- 3.2.09 Apply appropriate questioning techniques to determine client needs and wants
- 3.2.10 Provide product, warranty and maintenance education to the customer

Academic Standards

- English: Use a variety of strategies to enhance listening comprehension. (Communication A, 8-10; Communication A, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)

Benchmark: 3.4 Finance

Level 2: Analyze fiscal status of an enterprise and reallocate resources to maintain/increase profitability

Indicators

- 3.4.05 Budget resources (e.g., capital, human, financial, time)
- 3.4.08 Maintain financial records and interpret and analyze financial statements
- 3.4.09 Determine cost of doing business (e.g., personnel, depreciation, materials, freight, quality)
- 3.4.10 Calculate and analyze return on investment (ROI)
- 3.4.11 Forecast future budgetary needs

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (Number G, 8-10)
- Social Studies: Analyze how scarcity of productive resources affects supply, demand, inflation and economic choices. (Economics A, 11-12)

Benchmark: 3.9 Emotional Intelligence

Level 2: Exhibit techniques to control emotional reactions to people and situations

Indicators

- 3.9.03 Manage personal emotions, behavior and appearance to maintain professionalism
- 3.9.04 Describe and exhibit appropriate ethical behavior
- 3.9.05 Accept and use constructive feedback to improve work habits

Academic Standards

- English: Use a variety of strategies to enhance listening comprehension. (Communication A, 8-10; Communication A, 11-12)
- Social Studies: Analyze how issues may be viewed differently by various cultural groups. (People in Societies A, 11-12)

Benchmark: 4.1 Safety Procedures

Level 2: Follow safety procedures in specific situations with specialized tools and equipment, evaluate situation and take corrective action

Indicators

- 4.1.01 Demonstrate knowledge of safety rules and regulations
- 4.1.02 Interpret safety signs and symbols
- 4.1.03 Model safe attitudes and behaviors (e.g., lifting, climbing)
- 4.1.04 Identify safety hazards and take corrective measures
- 4.1.05 Use safety equipment in accordance with established procedures
- 4.1.06 Follow established procedures for the administration of first aid and contact emergency medical personnel when necessary

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)

Benchmark: 4.2 Stationary and Mobile Equipment Maintenance

Level 2: Inspect and maintain specialized machinery and equipment according to schedule

Indicators

- 4.2.01 Perform a machine condition inspection
- 4.2.02 Lubricate machinery and equipment
- 4.2.03 Ensure presence and function of safety systems and hardware

- 4.2.04 Service basic electrical systems (e.g., fuses and bulbs)
- 4.2.07 Identify, select and maintain fluid levels
- 4.2.08 Maintain machinery, equipment, instruments and facility cleanliness, appearance, and safety
- 4.2.10 Conduct preventative maintenance and identify causes of malfunctions and failures
- 4.2.11 Calibrate metering, monitoring, and sensing equipment
- 4.2.12 Inspect and maintain tooling

Academic Standards

- English: Use appropriate self-monitoring strategies for comprehension. (Reading Process C, 8-10; Reading Process C, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)

Benchmark: 4.3 Equipment Operation

Level 2: Inspect and safely operate specialized equipment with some limitations to adjustments and functions

Indicators

- 4.3.01 Follow manufacturer's recommended operating procedures and adjustment specifications
- 4.3.02 Describe function, limitations, and proper use of equipment, equipment controls and instrumentation
- 4.3.03 Perform pre-operation inspection and adjustments
- 4.3.04 Perform appropriate start-up, operating and shut-down procedures
- 4.3.05 Identify, select and exhibit the desired application of hand and power tools
- 4.3.06 Perform post-operating inspection and adjustments

Academic Standards

- English: Demonstrate comprehension of print and electronic text by responding to questions (e.g., literal, inferential, evaluative and synthesizing). (Reading Process B, 8-10; Reading Process B, 11-12)
- Math: Apply mathematical knowledge and skills routinely in other content areas and practical situations. (Mathematical Processes B, 8-10)