Fundamental Animal Science
18101

Rationale Statement:

This class will address the basic knowledge and skills necessary to care for and meet the needs of animals. Classroom and laboratory content should be enhanced by utilizing appropriate equipment and technology. Algebra, English, biology and human relations skills will be reinforced in the course. Work-based learning strategies appropriate for this course are school-based enterprises and field trips. This class is reinforced through the FFA and SAE activities such as the Livestock Career Development Event and Proficiency Awards. Each student will be expected to complete a Supervised Agricultural Experience (SAE).

Suggested grade level: 9-12

Topics covered:

- Anatomy and Physiology
- Breeds
- Safety
- Nutrition
- Health
- Reproduction
- Genetics
- Performance
- Consumer Concerns

Indicator #1: Examine animal anatomy and physiology.	
Bloom's Taxonomy Level	**Standard and Examples**
Understanding	**AN1.1 Classify animals.** Examples: • Define types of animals by species. • Define types of animals by gender. • Identify livestock breeds. • Discuss desired traits of animals.
Understanding	**AN1.2 Recognize the anatomy of animal species' to understand how the body structures interact.** Examples: • Use livestock evaluation terminology to describe an animal. • Identify selected animal parts from a diagram or on a real animal.
Analyzing	**AN1.3 Analyze a subject animal to determine the nature of its health.** Examples: • Examine an animal's health status. • Check an animal for symptoms of diseases, illnesses, parasites, etc. • Diagnose animal ailments. • Compare treatment options.
Indicator #2: Describe practices for safely working with animals.	
Bloom's Taxonomy Level	**Standard and Examples**
Understanding	**AN2.1 Describe practices for safely working with animals.** Examples: • Explain field of vision relating to fight or flight reactions. • Identify typical animal reactions. • Describe precautions that can be taken around animals. • Explain factors which serve to stimulate or discourage given types of animal behavior. • Describe safe practices when operating animal handling facilities.

Indicator #3: Distinguish elements of proper animal nutrition.	
Bloom's Taxonomy Level	**Standard and Examples**
Understanding	**AN3.1 Describe an animal's differing nutritional needs throughout its life cycle.** Examples: • Recognize the different phases of an animal's life cycle by drawing a diagram. • Identify nutritional needs at each animal developmental stage. • Discuss how climate affects nutritional needs.
Analyzing	**AN3.2 Analyze a feed ration to determine whether or not it fulfills a given animal's nutrient requirements.** Examples: • Interpret data from a nutritional table. • Compare the differences between good and poor quality feedstuffs. • Select appropriate feeds for a ration from a list of possible feedstuffs.
Indicator #4: Distinguish the factors that influence an animal's reproductive cycle.	
Bloom's Taxonomy Level	**Standard and Examples**
Analyzing	**AN4.1 Examine male and female reproductive systems.** Examples: • Differentiate the parts of male and female reproductive tracts on example animals. • Illustrate the components of reproductive tracts.

Understanding	**AN4.2 Discuss reproductive cycles.** Examples: • Graph gestational periods in animals by species. • Identify signs of heat for breeding purposes. • Discuss the pros and cons of breeding through natural cover and artificial insemination and embryo transfer. • Describe techniques of artificial insemination by demonstrating on a live animal.
Evaluating	**AN4.3 Evaluate an animal to determine breeding soundness.** Example: • Evaluate the results of a semen test. • Evaluate structural correctness.
Analyzing	**AN4.4 Predict genetic outcomes.** • Determine genotype and phenotype. • Discuss the implications of genetic variation. • Identify dominant and recessive traits. • Determine offspring makeup based on EPDs.
Indicator #5: Identify environmental factors that affect an animal's performance.	
Bloom's Taxonomy Level	**Standard and Examples**
Understanding	**AN5.1 Recognize optimum performance for a given animal species.** Examples: • Identify a given species' desirable production numbers (E.g., birth weight, age of maturity, age of sexual maturity, etc.). • Identify reasons why some animals perform better than others. • Evaluate sire performance records (EPD's, ratios, pedigree and carcass data).

Evaluating	**AN5.2 Assess an animal to determine if it has reached its optimum performance level.** Examples: • Monitor feed efficiency. • Formulate rate of gain. • Monitor daily milk production. • Monitor percent lamb crop.
Indicator #6: Examine animal industry issues.	
Bloom's Taxonomy Level	**Standard and Examples**
Analyzing	**AN6.1 Compare and contrast consumer concerns related to animal food products.** Examples: • Question the effect of animal hormones on humans. • Evaluate HACCP handling procedures. • Debate pasteurization of milk products.
Analyzing	**AN6.2 Analyze consumer concerns related to animal welfare.** Examples: • Debate humane processing practices. • Debate the value of confinement versus free range. • Compare and contrast the intentions of animal welfare groups and animal industry organizations.