**Animal Science Course Standards**

**Bryan High School**

1. **Students will demonstrate knowledge of the large animal industry and the best management practices.** (NDE Standard #1-6 of Large Animal Management)
   - Observe and research the market based trends of animal products and consumption.
   - Determine Nebraska's rank in large animal livestock production within the U.S.
   - Discuss the purpose of the USDA and why they are important.
   - Compare and contrast the various marketing resources available to producers and consumers.

2. **Students will have an understanding of the companion animal industry.** (NDE Standard #1 Companion Animal)
   - Explain the responsibilities and factors involved in selecting a companion animal.
   - Consider and examine the benefits of pet ownership.
   - Determine the methods of proper pet population control.

3. **Students will distinguish between the concept of animal rights and the concept animal welfare.** (NDE Standard #2 Companion Animal and #7 Large Animal Management)
   - Understand the animal rights and the concept of animal welfare.
   - Identify animal rights and animal welfare principles.
   - Understand the implication of animal behavior and its correlation to management.

4. **Students will apply principles of animal nutrition to ensure the proper growth, development, reproduction, and economic production of the animals.** (NDE Standard #3 Animal Biology)
   - Compare and contrast the digestive systems of various species.
   - Estimate the nutritional requirements for different animal life processes.
   - Formulate rations for specific species on various stages of development.
   - Compare the various processing and packaging techniques used within the animal agriculture industry.

5. **Students will apply principles of physiology to cellular growth and development in sound animal management practices.** (NDE Standard #5 Animal Biology)
   - Describe the growth of specific cells relative to maturity of the animal.
   - Explain how the impact of growth implants, supplements, and growth enhancers affect cell biology.
   - Evaluate the impact of growth implants, supplements, and growth enhancers on the food quality from livestock through physiological cellular changes, both perceived and real.
6. **Students will apply principles of physiology to conception, gestation, parturition and lactation in sound animal management practices. (NDE Standard #2 Animal Biology)**
   - Identify anatomical components of the male and female reproductive systems of animals.
   - Identify the endocrine system and explain functions as affected by endocrine components.
   - Explain the biology of estrous synchronization, superovulation, embryo flushing, embryo transfer, and other reproductive management practices.
   - Explain the biology of reproductive management in various species.
   - Explain the biology of gestation in various species.

7. **Students will recommend animal care and practices and apply complex procedures to prevent diseases. (NDE Standard #4 Animal Biology)**
   - Recognize and determine the living and non-living factors affecting the animals' susceptibility to disease.
   - Describe sanitation, hygiene, and other activities used in the treatment of prevention of diseases or parasites.