Equine Science

Equine Science is a course that enables students to become knowledgeable in the areas of caring for and managing horses. Topics include career opportunities, safety, history and development, anatomy and physiology, nutrition, health, and selection and conformation. Students also learn about tools, tack, and facilities necessary for the proper care of horses.

Content standards for this course are not intended to serve as the entire curriculum. Teachers are encouraged to expand the curriculum beyond the limits of these content standards to accommodate specific community interests and utilize local resources. This course encourages critical thinking, use of the scientific method, integration of technology, development of student leadership skills, and application of knowledge and skills related to practical questions and problems. Safety concepts are integrated into instruction to the maximum extent possible.

Career and technical student organizations are integral, cocurricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

Career Opportunities

Students will:

1. Describe career opportunities in the equine industry.

Safety

2. Identify safety techniques to be considered when handling horses.
   Examples: approaching a horse from the front and side, avoiding sudden movement, speaking quietly
   - Describing horse behavior that can cause injuries to the horse and to the handler
     Examples: submission to some members of the herd, dominance over some members of the herd, fight-or-flight behaviors

History and Development

3. Differentiate characteristics of light horses, draft horses, and ponies, including structure, muscling, color, and shape of head and neck.
   - Listing various breeds of light horses, draft horses, and ponies
     Examples: breeds of light horses—Quarter Horse, Appaloosa, Thoroughbred, Arabian, Morgan, American Saddlebred, Tennessee Walking Horse, Paint
     breeds of ponies—Welsh, Shetland, Pony of the Americas, American Walking Pony
   - Describing historical roles of horses in transportation and recreation
Anatomy and Physiology

4. Describe the external anatomy of a horse.
   Examples: withers, crest, poll, forehead, muzzle, point of shoulder, pastern, coronet, fetlock

5. Describe structures and functions of the equine digestive system.

6. Explain functions of the equine circulatory system.

7. Identify parts and functions of equine male and female reproductive systems.
   - Describing factors in an equine breeding program
     Examples: heat cycle, gestation, lactation, artificial insemination, fertility

Nutrition

8. Analyze equine feed ingredients to determine nutritional value.
   Examples: grain, roughage, vitamins, minerals
   - Identifying possible problems associated with feeding equine

9. Explain the balance of rations used in feeding equine.
   - Explaining nutritional requirements at various stages of equine development

Health

    Examples: disease—equine encephalitis
             method of prevention—improved management practices

11. Differentiate among internal and external parasites prevalent in equine.
    Examples: internal—ascarids, strongyles, pinworms
              external—deerflies, lice, mites, ringworm, ticks, botflies

12. Describe hoof problems in equine.
    - Recognizing symptoms of lameness in equine

13. Diagnose conditions that require the assistance of a farrier.
    Examples: farrier assistance—trimming, shoeing
    - Identifying tools used by a farrier
      Examples: apron, hoof gauge, hoof knife, hoof pick, anvil, rasp, hoof nippers, nail clincher
14. Categorize normal equine ranges for vital signs, critical and noncritical injuries, and treatment of wounds.
   Examples: vital signs—heart rate, respiratory rate
   critical injuries—broken bones
   noncritical injuries—cuts
   treatment of wounds—cleaning, applying ointments, applying bandages, stitching

**Selection and Conformation**

15. Distinguish factors in selecting horses for a particular use.
   Example: draft horses for pulling heavy loads
   - Describing procedures for determining the age of a horse
     Example: checking size of teeth
   - Describing factors to consider in judging equine halter and performance classes
   - Evaluating various equine training techniques

**Facilities and Tack**

16. Describe equine barn styles and facilities.
    Examples: barn styles—gambrel, gable
    facilities—round pen, stables
    - Identifying various tack and equipment used in the horse industry
    - Analyzing environmental issues to maintain and care for horses
      Examples: waste management, overgrazing