

ANIMAL SCIENCE

Animal Science is a two semester program that provides students with an overview of the field of animal science. Students participate in a large variety of activities and laboratory work including real and simulated animal science experiences and projects. All areas that the students study can be applied to both large and small animals. Topics to be addressed include: anatomy and physiology, genetics, reproduction; nutrition, careers in animal science, common diseases and parasites, social and political issues related to the industry, and management practices for the care and maintenance of animals.

Course Specifications

- DOE Code: 5008
- Recommended Grade Level: Grade 9-12
- Recommended Prerequisites: Introduction to Agriculture, Food and Natural Resources
- Credits: 1-3 credit(s) per semester, maximum of 6 credits
- Fulfills a Life Science or Physical Science requirement for the General Diploma only or counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas

Application of Content and Multiple Hour Offerings

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences. When a course is offered for multiple hours per semester, the amount of laboratory application or work-based learning needs to be increased proportionally.

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in FFA, the CTSO for this area.

Content Standards

Domain - Anatomy and Physiology

Core Standard 1 Students apply and adapt principles of comparative anatomy and physiology to uses within various animal systems to understand how the animal body works.

Standards

- AS-1.1 Explain the importance of the binomial system of nomenclature
- AS-1.2 Describe the functions of the animal body systems and system components
- AS-1.3 Compare and contrast organ types and functions among animal species

Core Standard 2 Students recommend animals for specific purposes and maximum performance based on anatomy and physiology to conform to industry standards.

Standards

- AS-2.1 Compare and contrast desirable anatomical and physiological characteristics of animals within and between species

- AS-2.2 Evaluate animals to maximize performance based on anatomical and physiological characteristics that affect health, growth and reproduction
- AS-2.3 Assess an animal to determine if it has reached its optimal performance level based on anatomical and physiological characteristics

Domain - Animal Health

Core Standard 3 Students implement a prevention and treatment program for animal diseases, parasites and other disorders to maintain proper animal health.

Standards

- AS-3.1 Explain methods of determining animal health and disorders
- AS-3.2 Perform simple health-check evaluations on animals
- AS-3.3 Identify common diseases, parasites and physiological disorders that affect animals
- AS-3.4 Explain the health risk of zoonotic diseases to humans and their historical significance and future implications

Domain - Animal Nutrition

Core Standard 4 Students analyze a feed ration to provide for the nutritional needs of animals.

Standards

- AS-4.1 Compare and contrast common types of feedstuffs and the roles they play in the diets of animals
- AS-4.2 Explain the purpose and benefits of feed additives
- AS-4.3 Formulate animal feeds based on nutritional requirements, using feed ingredients for maximum nutrition and optimal economic production

Domain - Animal Reproduction

Core Standard 5 Students evaluate the male and female reproductive systems in selecting animals to manage breeding stock.

Standards

- AS-5.1 Explain the functions of major organs in the male and female reproductive systems
- AS-5.2 Evaluate animals for reproductive readiness and soundness
- AS-5.3 Select breeding animals based on characteristics of the reproductive organs

Core Standard 6 Students apply scientific principles in the selection and breeding of animals to increase reproductive rates.

Standards

- AS-6.1 Explain genetic inheritance in animals
- AS-6.2 Define natural and artificial breeding methods
- AS-6.3 Select animal breeding methods based on reproductive and economic efficiency

Domain - Animal Safety

Core Standard 7 Students establish safe animal handling and management techniques to eliminate harm to the handlers and animals.

Standards

- AS-7.1 Discuss the dangers involved in working with animals
- AS-7.2 Outline safety procedures for working with animals by species
- AS-7.3 Interpret animal behaviors and execute protocols for safe handling of animals
- AS-7.4 Explain the implications of animal welfare and animal rights
- AS-7.5 Design programs that assure the welfare of animals and prevent abuse or mistreatment

Domain - Animal Products and Services

Core Standard 8 Students evaluate animal products and services to demonstrate the importance of animals.

Standards

- AS-8.1 Identify products or services that animals provide humans

- AS-8.2 Identify animal production practices that could pose health risks or are considered to pose risks by some
- AS-8.3 Discuss consumer concerns with animal production practices relative to human health

Domain - Animal Management

Core Standard 9 Students evaluate housing, equipment and handling facilities for the animal systems to provide for the needs of animals.

Standards

- AS-9.1 Identify facilities needed to house and produce each animal species safely and efficiently
- AS-9.2 Select equipment and implement animal handling procedures and improvements
- AS-9.3 Identify optimal environmental conditions for animals

Domain - Careers

Core Standard 10 Students examine the scope of career opportunities in and the importance of agriculture to the economy.

Standards

- AS-10.1 Define and explore animal agriculture and animal agribusiness and their role in the economy
- AS-10.2 Evaluate and explore the animal science career opportunities in agriculture
- AS-10.3 Explain the nature of and become familiar with those terms related to an SAE program
- AS-10.4 Explore the numerous possibilities for an SAE program which a student might develop

Domain - Leadership

Core Standard 11 Students validate the necessity of leadership skills development in conjunction with participation in The National FFA Organization (FFA) as a critical component to a well rounded agricultural education.

Standards

- AS-11.1 Acquire and demonstrate communication skills such as writing, public speaking, and listening while refining oral, written, and verbal skills
- AS-11.2 Recognize and explain the role of the FFA in the development of leadership, education, employability, communications and human relations skills
- AS-11.3 Examine roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment
- AS-11.4 Acquire the skills necessary to positively influence others
- AS-11.5 Develop a skill set to enhance the positive evolution of the whole person

Domain - Supervised Agriculture Experience

Core Standard 12 Students validate the necessity of a Supervised Agricultural Experience (SAE) program as a critical component to a well rounded agricultural education.

Standards

- AS-12.1 Explain the nature of and become familiar with those terms related to an SAE program
- AS-12.2 Explore the numerous possibilities for an SAE program which a student might develop
- AS-12.3 Develop an individual SAE program and implement record keeping skills