Agriculture, Food, and Natural Resources

The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

Program of Study: Animal Science

The Animal Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of animals and other living organisms. This program of study includes applying biology and life science to real-world life processes of animals and wildlife, either in laboratories or in the field, which could include a veterinary office, a farm or ranch, or any outdoor area harboring animal life. Students will research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals.

Courses

	Vet Med Pathway	Non-Vet Med Pathway
9th Grade	Principles of Agriculture, Food, and Natural Resources	
10th Grade	Small Animal Management Equine Science Entrepreneurship I Wildlife, Fisheries, and Ecology Management (Optional)	
11th Grade	Livestock and Poultry Production	
12th Grade	Advanced Animal Science Veterinary Science Practicum in Agriculture, Food, and Natural Resources OR Career Preparation for Programs of Study	Advanced Animal Science Practicum in Agriculture, Food, and Natural Resources OR Career Preparation for Programs of Study

Work-Based Learning/Expanded Learning Opportunities

Work-Based Learning Activities	• Intern in a veterinary clinic, caring for animals and wildlife being treated in the clinic • Earn industry certification • Work with Sheldon Animal Care Center
Expanded Learning Opportunities	Sheldon FFA

Aligned Industry-Based Certifications

- Certified Veterinary Assistant, Level 1 OR Elanco Veterinary Medical Applications Certification
- Elanco Fundamentals of Animal Science Certification

Example Postsecondary Opportunities

Apprenticeships
- Reproduction Technician

Associate Degrees
- Biological and Physical Sciences
- Entomology

Bachelor's Degrees
- Animal Science
- Zoology/Animal Biology

Master's, Doctoral, and Professional Degrees
- Marine Sciences
- Biotechnology

Additional Stackable IBCs/License
- Veterinarian
- Certified Veterinary Technician

Example Aligned Occupations

Veterinary Assistants and Laboratory Animal Caretakers
Median Wage: $33,581
Annual Openings: 1,953
10-Year Growth: 24%

Veterinary Technologists and Technicians
Median Wage: $35,698
Annual Openings: 1,217
10-Year Growth: 24%

Veterinarian
Median Wage: $125,030
Annual Openings: 435
10-Year Growth: 26%

Successful completion of this program of study will fulfill requirements of the Business and Industry Endorsement.
Approved Statewide Program of Study. C. E. King High School – 2026-27

Animal Science
Course Information

Level 1

Principles of Agriculture, Food & Natural Resources — **13000200**

Grade: 9-10 **Credit: 1**

Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. To prepare for success, students need opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.

Level 2

Equine Science — **13000500**

Grade: 10-12 **Credit: 0.5**

In Equine Science, students will acquire knowledge and skills related to equine animal systems and the equine industry. Equine Science may address topics related to horses, donkeys, and mules. To prepare for careers in the field of animal science, students must enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Small Animal Management — **13000400**

Grade: 10-12 **Credit: 0.5**

In Small Animal Management, students will acquire knowledge and skills related to small animals and the small animal management industry. Small Animal Management may address topics related to small mammals such as dogs and cats, amphibians, reptiles, and birds. To prepare for careers in the field of animal science, students must enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings.

Entrepreneurship I — **13011101**

Grade: 10-12 **Credit: 1**

In Entrepreneurship I, students will gain the knowledge and skills needed to become an entrepreneur in a free enterprise system. Students will learn the key concepts necessary to begin and operate a business. The primary focus of the course is to help students identify the types and selection criteria of business structures, understand the components of a business plan, determine feasibility of an idea using research, and develop and present a business concept. In addition, students will understand the basics of management, accounting, finance, marketing, risk, and product development.

Wildlife, Fisheries, and Ecology Management (Optional) — **13001500**

Grade: 10-12 **Credit: 1**

Wildlife, Fisheries, and Ecology Management examines the management of game and non-game wildlife species, fish, and aquacrops and their ecological needs as related to current agricultural practices. To prepare for careers in natural resource systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Level 3

Livestock and Poultry Production — **13000300**

Grade: 11-12 **Credit: 1**

Prerequisite: At least one credit from the Agriculture, Food, and Natural Resources Career Cluster

In Livestock and Poultry Production, students acquire knowledge and skills related to the livestock and poultry production industry. Livestock and Poultry Production may address topics related to beef cattle, dairy cattle, swine, sheep, goats, and poultry. To prepare for careers in the field of animal science, students must attain academic knowledge and skills, acquire knowledge and skills related to livestock and poultry systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Animal Science
Course Information

Level 4

Advanced Animal Science (Satisfies a science credit) **13000700**

Grade: 11-12 **Credit: 1**

Prerequisite: Biology and Chemistry or IPC; Algebra I and Geometry; Small Animal Science or Equine Science or Livestock Production

Advanced Animal Science examines the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences. To prepare for careers in the field of animal science, students must attain academic skills and knowledge, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry standards. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Industry Based Certification: Elanco Fundamentals of Animal Science Certification

Veterinary Science **13000600**

Grade: 11-12 **Credit: 1**

Prerequisite: Equine Science, Small Animal Management, or Livestock Production

Veterinary Science covers topics relating to veterinary practices, including practices for large and small animal species. To prepare for careers in the field of animal science, students must attain academic knowledge and skills, acquire technical knowledge and skills related to animal systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills and technologies in a variety of settings.

Industry Based Certification: Elanco Veterinary Medical Applications Certification OR Certified Veterinary Assistant, Level 1

Practicum in Agriculture, Food, and Natural Resources – Animal Science **13002500**

Grade: 12 **Credit: 2**

Prerequisite: A minimum of two credits with at least one course in a Level 2 or higher course from the Agriculture, Food, and Natural Resources career cluster

Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. To prepare for careers in agriculture, food and natural resources, students must attain academic skills and knowledge, acquire technical knowledge and skills related to the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.