

<h1>Veterinary Science</h1>	
Course Credit	1.0
Grade Level(s)	9-12
Prerequisite(s)	Introduction to Veterinary Science

Veterinary Science is designed to prepare students for entry-level employment or for advanced training as veterinary assistants. Topics include safety, medical terminology, scientific classification, health and disease, anatomy and physiology, applied clinical mathematics, anesthesiology and basic surgical procedures, business management practices, veterinary law and ethics, and applications of technology.

Foundational standards, shown in the chart below, are an important part of every course. Through these standards, students learn and apply safety concepts, explore career opportunities and requirements, practice the skills needed to succeed in the workplace, develop leadership and take advantage of the opportunities afforded by Career and Technical Student Organizations. Also, students will learn and practice essential digital skills, and participate in supervised projects which allow them to put into practice the skills and knowledge acquired in the classroom, shop, and lab. The foundational standards are to be incorporated throughout the course.

<h2>Foundational Standards</h2>	<ol style="list-style-type: none"> 1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces. 2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork. 3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing. 4. Demonstrate digital literacy by using digital and electronic tools appropriately, safely, and ethically. 5. Participate in a Career Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork. 6. Participate in Supervised Agricultural Experiences and/or work-based, experiential, and service learning.
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Veterinary Science Content Standards

Each content standard completes the stem “*Students will...*”

Safety	<ol style="list-style-type: none">1. Identify hazards in the veterinary clinic and in a field setting; list safety precautions and procedures that protect animals and veterinary personnel.2. Perform routine animal handling and restraint procedures.3. Research, evaluate, and share information about the importance of biosecurity in the veterinary field.4. Demonstrate the ability to follow procedures for sanitation, disinfection, and sterilization to prevent the transfer of zoonotic diseases.
Medical Terminology	<ol style="list-style-type: none">5. Obtain and communicate information to explain common medical terminology, abbreviations, and symbols relating to the diagnosis, pathology, and treatment of animals.
Scientific Classification	<ol style="list-style-type: none">6. Use dichotomous keys to classify animals by their physical characteristics and to determine levels of taxonomy.<ol style="list-style-type: none">a. Gather and communicate information regarding the various breeds of domestic animal species.

**Health and
Disease**

7. Investigate how common viral, bacterial, and fungal diseases affect animals and summarize methods of prevention, treatment, and control of diseases.
8. Develop and use models to explain the life cycles of internal and external parasites to determine effective treatment, prevention, and control.
9. Analyze and interpret data for normal parameters of temperature, pulse, respiration, and animal behavior as a basis for recognizing abnormal readings or behaviors.
10. Engage in argument to defend the need for conducting urinalyses and fecal exams for diagnosing issues related to animal health.
11. Assess common physical injuries, including lacerations, abrasions, and bite wounds, then select basic first aid options, wound care methods, and bandaging procedures for each injury.
 - a. Use models to compare and contrast wounds at different phases of healing to determine necessary wound therapy.
 - b. Construct an explanation that describes types and purposes of bandages, splints, slings, casts, and Elizabethan collars to determine indications for the use of each.

**Anatomy
and Physiology**

12. Construct representations of major body systems of various domestic animals and describe the functions of each.

Examples: skeletal, muscular, respiratory, digestive, nervous, integumentary, urinary, and reproductive system.
13. Illustrate and describe gestation stages in various domestic animals.
14. Construct an explanation of proper post-partum care for various domestic animals.

**Applied Clinical
Mathematics**

15. Use mathematical calculations to formulate dosages, concentrations, and dilutions; compute costs; and prepare invoices for veterinary practice.

<p>Anesthesiology and Basic Surgical Procedures</p>	<p>16. Construct explanations based on evidence from investigations regarding types, indications, and contraindications of anesthesiology for surgery and in certain grooming situations.</p> <p>17. Obtain, evaluate, and communicate information to describe basic surgical procedures for selected domestic animals.</p> <p><i>Examples: caesarean section, castration, spaying, nail and claw removal</i></p>
<p>Business Management Practices</p>	<p>18. Construct explanations of procedures for collecting and analyzing data for maintaining accurate animal health records.</p> <p><i>Examples: inventory, surgical authorization forms</i></p> <p>19. Obtain and communicate information regarding the impact of proper financial management in the veterinary workplace, citing examples of effective and ineffective procedures.</p> <p>20. Investigate and describe elements of effective patient care, client relations, and management of veterinary facilities, including effective communication with specific age groups among pet owners.</p>
<p>Veterinary Law and Ethics</p>	<p>21. Engage in argument from evidence to debate the philosophical, social, moral, and ethical issues encountered in the veterinary profession.</p> <p><i>Example: animal rights and welfare</i></p> <p>22. Cite specific textual evidence from legislation and news media to summarize local, state, and federal laws that regulate the practice of veterinary medicine.</p> <p><i>Examples: professional licensing and state boards; liability of veterinary staff; policies and regulations from U.S. Food and Drug Administration (FDA), U.S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA)</i></p>

**Applications of
Technology**

23. Research and communicate information about the impact of emerging technologies on veterinary science, including advances in equipment, procedures, and healthcare.

Examples: genetic engineering, digital x-rays, stem cell therapy