

Veterinary Science I

8088 36 weeks / 140 hours

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Acknowledgments

The components of this instructional framework were developed by the following curriculum development team members:

Karen Bowles, Veterinary Science Instructor and Licensed Veterinary Technician, Advanced Career Education Center at Hermitage
Laurie Damron, Instructor and Certified Veterinary Assistant, Massanutten Technical Center
Laura Delano, Instructor and Certified Veterinary Assistant, Culpeper County High School
Dr. Carmen Franck Vaughn, DVM, Veterinarian, Carmen Franck Vaughn, DVM PLLC
Dr. Carter Hounsel, DVM, Supervisory Veterinary Medical Officer and Emergency Coordinator, USDA Animal and Plant Health Inspection Service: Veterinary Services
Anne Hudson, Instructor and Licensed Veterinary Technician, College and Career Academy at Pruden
Karen Nestlerode, Veterinary Science Instructor, Edison Academy
Katie Reames, Director of Feed and Nutrition Services, CFC Farm and Home Center
Debra Rosson, Veterinary Science Instructor and Licensed Veterinary Technician, New Horizons Career and Technical Center
Kathryn Simunich, Instructor and Certified Pet Groomer, Louisa County High School
Theresa Thompson, Instructor and Certified Veterinary Assistant, Stuarts Draft High School
Valerie Webb, Agriculture Instructor, Spotsylvania High School
Amanda Wooden, Animal Import Coordinator, Virginia Department of Agriculture and Consumer Services

Correlations to the Virginia Standards of Learning were reviewed and completed by:

Vickie L. Inge, Mathematics Committee Member, Virginia Mathematics and Science Coalition
 Anne F. Markwith, New Teacher Mentor, Gloucester County Public Schools
 Cathy Nichols-Cocke, PhD, Fairfax High School, Fairfax County Public Schools
 Caroline C. Wheeler, M.T., Secondary English, Richmond

The framework was edited and produced by the CTE Resource Center:

Robin A. Jedlicka, Writer/Editor
 Kevin P. Reilly, Administrative Coordinator

LaVeta M. Nutter, Specialist, Agricultural Education and Related Clusters
 Office of Career, Technical, and Adult Education
 Virginia Department of Education

Dr. Tricia S. Jacobs, CTE Coordinator of Curriculum and Instruction
 Office of Career, Technical, and Adult Education
 Virginia Department of Education

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Course Description

Suggested Grade Level: 11 or 12

Veterinary Science I prepares students for postsecondary education and/or careers in veterinary medicine or related fields. Students develop their skills in anatomy, nutrition, medical terminology, sanitation, clinical exams, and handling animals. Live animal handling may occur. Course content also includes facility maintenance, and office functions, as well as safety practices. The National FFA Organization, Supervised Agricultural Experience (SAE), or related student organization activities are encouraged.

NOTE: This course has specific state laws and regulations from a governing medical board or agency. Please contact the Virginia Department of Education, Office of Career and Technical Education prior to implementing this course. All inquires may be sent to cte@doe.virginia.gov.

As noted in [Superintendent's Memo #058-17 \(2-28-2017\)](#), this Career and Technical Education (CTE) course must maintain a maximum pupil-to-teacher ratio of 20 students to one teacher, due to safety regulations. The 2016-2018 biennial budget waiver of the teacher-to-pupil ratio staffing requirement does not apply.

Task Essentials Table

8088	Tasks/Competencies
+	Identify the role of supervised agricultural experiences (SAEs) in agricultural education.
+	Participate in an SAE.

<input checked="" type="radio"/>	Identify the benefits and responsibilities of FFA membership.
<input checked="" type="radio"/>	Describe leadership characteristics and opportunities as they relate to agriculture and FFA.
<input type="radio"/>	Apply for an FFA degree and/or an agricultural proficiency award.
<input checked="" type="radio"/>	Explore career opportunities in animal health care.
<input checked="" type="radio"/>	Investigate the different types of work-based learning opportunities.
<input checked="" type="radio"/>	Develop a plan for a work-based learning project.
<input type="radio"/>	Conduct a work-based learning project.
<input checked="" type="radio"/>	Describe the importance of and opportunities for continuing education in the animal care field.
<input checked="" type="radio"/>	Identify the roles and responsibilities of professionals in the veterinary industry.
<input checked="" type="radio"/>	Describe the functions of local, state, and national professional organizations in the field of animal care.
<input type="radio"/>	Define prominent animal special interest groups.
<input checked="" type="radio"/>	Explain legal and ethical issues in the veterinary medicine field.
<input checked="" type="radio"/>	Describe the physical and mental demands and personal coping mechanisms of various animal-care professionals.
<input checked="" type="radio"/>	Follow safety procedures for personal protection in the veterinary medical industry.
<input checked="" type="radio"/>	Follow laboratory safety procedures.
<input checked="" type="radio"/>	Identify the importance of safety data sheets (SDS).
<input checked="" type="radio"/>	Explain the role and regulations of the Occupational Safety and Health Administration (OSHA) and the Virginia Department of Labor pertaining to veterinary science.
<input checked="" type="radio"/>	Identify the physical, chemical, biological, and zoonotic hazards associated with the veterinary industry.
<input checked="" type="radio"/>	Describe chemicals, including cleansers, disinfectants, and antiseptics, commonly used in veterinary practice.
<input checked="" type="radio"/>	Explain the concept of asepsis in veterinary work.
<input type="radio"/>	Explain the origin of each companion animal species.
<input type="radio"/>	Identify the colors and other characteristics of breeds within each species.
<input type="radio"/>	Identify breeding methods and rearing techniques of young species.

<input type="radio"/>	Describe appropriate housing and maintenance of companion animals.
<input type="radio"/>	Explain species and/or breed suitability as a companion animal.
<input checked="" type="radio"/>	Describe behavior patterns of companion animals.
<input checked="" type="radio"/>	Interpret companion animal behavior.
<input checked="" type="radio"/>	Identify unique handling considerations for species/breeds common in the veterinary field.
<input checked="" type="radio"/>	Identify equipment used for restraining animals.
<input checked="" type="radio"/>	Demonstrate respect for and safe treatment of classroom animals.
<input checked="" type="radio"/>	Demonstrate safe and humane restraint and handling methods used for veterinary procedures.
<input checked="" type="radio"/>	Describe safe and humane transport of an animal.
<input checked="" type="radio"/>	Lift and carry a dog and cat.
<input checked="" type="radio"/>	Move a nonaggressive dog and cat into and out of cage.
<input checked="" type="radio"/>	Identify techniques for handling an aggressive dog and cat.
<input checked="" type="radio"/>	Muzzle a dog and cat.
<input checked="" type="radio"/>	Restrain a dog and cat in lateral recumbency.
<input checked="" type="radio"/>	Describe the use of various types of equipment for restraining a dog and cat.
<input checked="" type="radio"/>	Describe how to move exotic species into and out of cages.
<input checked="" type="radio"/>	Check an animal for fleas.
<input type="radio"/>	Explain tick removal and prevention.
<input type="radio"/>	Prepare shampoos and creme rinses.
<input type="radio"/>	Bathe an animal.
<input type="radio"/>	Dry an animal.
<input checked="" type="radio"/>	Use grooming tools and equipment.
<input checked="" type="radio"/>	Trim an animal's nails.
<input type="radio"/>	Brush and/or demat an animal's coat.
<input checked="" type="radio"/>	Clean an animal's ears.
<input type="radio"/>	Clip an animal's coat with electric clippers.

<input type="radio"/>	Perform final comb-out.
<input checked="" type="radio"/>	Explain how to clean, sanitize, disinfect, and store laundry.
<input checked="" type="radio"/>	Clean and disinfect sink/tub.
<input checked="" type="radio"/>	Clean and disinfect small animal quarters.
<input type="radio"/>	Perform partial water changes and filter changes on aquariums.
<input checked="" type="radio"/>	Sanitize animal treatment area.
<input checked="" type="radio"/>	Clean floors.
<input checked="" type="radio"/>	Change trash liner.
<input checked="" type="radio"/>	Describe the various types of disposal methods within a facility.
<input checked="" type="radio"/>	Dispose of hazardous materials.
<input checked="" type="radio"/>	Provide appropriate types of bedding.
<input checked="" type="radio"/>	Explain formation of veterinary medical terminology.
<input checked="" type="radio"/>	Identify basic veterinary medical terms and abbreviations.
<input checked="" type="radio"/>	Demonstrate use of veterinary medical terminology.
<input checked="" type="radio"/>	Describe anatomical and directional terminology.
<input checked="" type="radio"/>	Describe the relationship among cells, tissues, organs, and organ systems.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the skeletal system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the muscular system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the respiratory system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the digestive system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the nervous system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the circulatory system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the urinary system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the reproductive system.
<input checked="" type="radio"/>	Explain the anatomy and physiology of the integumentary system.
<input type="radio"/>	Explore additional body systems.

<input checked="" type="radio"/>	Identify the six basic nutrients and their functions in maintaining animal health.
<input type="radio"/>	Calculate the maintenance energy requirement (MER) for an animal.
<input checked="" type="radio"/>	Determine the body condition of an animal.
<input checked="" type="radio"/>	Determine the nutritional value of animal feeds as they relate to dietary requirements of life stages.
<input type="radio"/>	Identify marketing strategies of feed companies.
<input checked="" type="radio"/>	Explain the importance of routine physical exams.
<input checked="" type="radio"/>	Identify the characteristics of healthy vs. unhealthy animals.
<input checked="" type="radio"/>	Describe the method of assessing animal health.
<input checked="" type="radio"/>	Demonstrate the use of diagnostic tools.
<input checked="" type="radio"/>	Weigh and/or measure animal.
<input checked="" type="radio"/>	Measure and evaluate vital signs.
<input checked="" type="radio"/>	Evaluate mucous membranes and capillary refill time (CRT).
<input checked="" type="radio"/>	Explain the concept of euthanasia.
<input checked="" type="radio"/>	Describe situations that may warrant euthanasia.
<input checked="" type="radio"/>	Describe aspects and accepted procedures and methods of humane euthanasia.
<input checked="" type="radio"/>	Explain how veterinary personnel can give support and assistance to a grieving client.
<input checked="" type="radio"/>	Describe accepted methods of handling animal remains.
<input checked="" type="radio"/>	Maintain veterinary records.
<input checked="" type="radio"/>	Explain the inventory process for supplies.
<input type="radio"/>	Explain equipment maintenance.
<input checked="" type="radio"/>	Handle telephone calls and other electronic communications.
<input checked="" type="radio"/>	Schedule an appointment.
<input checked="" type="radio"/>	Explain procedures for handling monetary transactions in the veterinary business.

Legend: Essential Non-essential Omitted

Note: Competencies 39-43 have been added to ensure compliance with federal legislation: National FFA Organization's Federal Charter Amendments Act (Public Law 116-7, <https://www.congress.gov/116/plaws/publ7/PLAW-116publ7.pdf>). All inquiries may be sent to

cte@doe.virginia.gov. Students are provided opportunities for leadership, personal growth, and career success. Instruction is delivered through three major components: classroom and laboratory instruction, supervised agricultural experience (SAE) program, and student leadership (FFA).

Curriculum Framework

Task Number 39

Identify the role of supervised agricultural experiences (SAEs) in agricultural education.

Definition

Identification should include

- defining an SAE program as *an opportunity for students to consider multiple careers and occupations in the agriculture, food, and natural resources (AFNR) industries, learn expected workplace behavior, develop specific skills within an industry, and apply academic and occupational skills in the workplace or a simulated workplace environment*
- researching the Foundational SAE
 - career exploration and planning
 - personal financial planning and management
 - workplace safety
 - employability skills for college and career readiness
 - agricultural literacy
- researching the Immersion SAE
 - entrepreneurship/ownership
 - placement/internships
 - research (experimental, analytical, invention)
 - school business enterprises
 - service learning
- developing a plan to participate in an SAE, based on personal and career goals
- researching available awards and degrees, based on SAE participation.

Teacher resource: [SAE Resources](#), National Council for Agricultural Education

Process/Skill Questions

- What are examples of SAEs related to this course and in the AFNR industries?
- Where can a copy of the Virginia SAE Record Book be found?
- What is an Immersion SAE?
- How does a placement/internship SAE differ from an ownership/entrepreneurship SAE?

- How does an SAE provide relevant work experience and contribute to the development of critical thinking skills?
- How is the SAE an extended individualized instructional component of a student's Career Plan of Study?
- How can an SAE be used to provide evidence of student growth and participation in authentic, work-related tasks?
- What are the four types of SAEs?
- What are the advantages of participating in work-based learning experiences and projects?
- How does one choose an appropriate SAE in which to participate?

Task Number 40

Participate in an SAE.

Definition

Participation should include

- developing, completing, or continuing a plan to participate in an SAE as a work-based learning experience, based on personal and career goals
- documenting experience, connections, positions held, and competencies attained, using the *Virginia SAE Record Book*
- researching available awards and degrees, based on SAE participation.

Teacher resources:

[FFA SAE](#)

[The Agricultural Experience Tracker](#)

Process/Skill Questions

- What are the advantages of participating in work-based learning experiences and projects?
- How do SAEs help prepare students for the workforce?
- What are some examples of SAEs in AFNR?

Exploring Leadership Opportunities through FFA

Task Number 41

Identify the benefits and responsibilities of FFA membership.

Definition

Identification should include

- benefits
 - listing opportunities to participate in community improvement projects and career development events (CDEs) and leadership development events (LDEs)
 - exploring leadership development opportunities
- responsibilities
 - researching the responsibilities of FFA officers, committees, and members
 - locating resources that guide participation in FFA activities
 - explaining the FFA Creed, Motto, Salute, and mission statement
 - explaining the meaning of the FFA emblem, colors, and symbols
 - explaining significant events and the history of the organization.

Process/Skill Questions

- How does one become an FFA member?
- What is the FFA's mission and how does it accomplish its mission?
- What are the benefits and responsibilities of FFA membership?
- What five FFA activities are available through the local chapter?
- What are some significant events in FFA history? How have these events shaped membership over time?
- What is the FFA program of activities (POA), and how is it used?

Task Number 42

Describe leadership characteristics and opportunities as they relate to agriculture and FFA.

Definition

Description should include

- examples of successful leaders
- types of leadership
 - autocratic
 - participative
 - laissez-faire
 - servant
 - followership
- positive leadership qualities and traits of successful leaders
- opportunities for participating in leadership activities in FFA
- demonstrating methods for conducting an effective meeting.

Process/Skill Questions

- Who are some successful leaders in the agriculture industry?
- What qualities make a successful leader?

- What are leadership traits?
- What is the difference between positive and negative leadership?

Task Number 43

Apply for an FFA degree and/or an agricultural proficiency award.

Definition

Application should include

- identifying types of FFA degrees
 - Greenhand
 - Chapter
 - State
 - American
- identifying proficiency award areas
 - entrepreneurship
 - placement
 - combined
 - agriscience research
- exploring CDEs and LDEs related to this course
- identifying all SAE criteria to be eligible for the award
- identifying the type of award
- applying for an FFA award.

Teacher resource: [FFA Agricultural Proficiency Awards](#)

Process/Skill Questions

- Where are the awards and their application criteria located?
- What are the benefits of winning an FFA award?
- What are the benefits and requirements of an FFA degree?
- What FFA awards are available?
- How does the FFA degree program reward FFA members in all phases of leadership, skills, and occupational development?
- What is the highest degree that can be conferred upon an FFA member at the national level?
- What are the requirements for a Greenhand FFA degree?

Exploring Work-Based Learning

Task Number 44

Explore career opportunities in animal health care.

Definition

Exploration should include

- listing employment opportunities in the animal-care industry
- identifying working conditions associated with the identified careers
- describing training requirements of the identified careers
- listing personal goals for a career in animal health care
- determining the field that is most compatible with personal goals
- listing the pros and cons of the career
- examining personal traits and interests that facilitate success in the career
- developing a career plan that includes the education and experience necessary for the career goal.

Many websites offer career exploration resources, including the Virginia Department of Education's [Career Planning Guide](#).

Process/Skill Questions

- How do the educational requirements and duties differ among the three levels of the veterinary medical field?
- What veterinary-related careers are available outside of veterinary medicine?
- What resources are available to research information about careers in animal care?
- Why is exploring career opportunities important before making educational decisions?

Task Number 45

Investigate the different types of work-based learning opportunities.

Definition

Investigation should include

- distinguishing among the terms *work-based learning*, *job shadowing*, *mentorship*, *internship*, and *service learning*
- comparing work-based learning methods by citing similarities and differences in requirements for participation, goals and objectives, preparation, and work hours of each method.

Process/Skill Questions

- What is the difference between mentorship and internship?

Task Number 46

Develop a plan for a work-based learning project.

Definition

Development of plan should include

- stating personal career goals and objectives
- identifying an area of work that will complement personal career goals
- identifying available work-based learning opportunities locally in the field and choosing one
- identifying the age requirements, hours and days allowed, and transportation needs for the work-based learning experience
- explaining how to obtain a work-based learning project and engage in the experience
- describing what will define successful completion of the work-based learning project.

Task Number 47

Conduct a work-based learning project.

Definition

Conducting a project should include

- completing/compiling job-acquisition materials, including application, cover letter, résumé, and references
- interviewing with the site supervisor, including a detailed review of the project
- fulfilling all expectations of the site supervisor
- keeping thorough records of the experience, including signed logs
- documenting the work-based project in a final written report.

Process/Skill Questions

- What kinds of records should be kept during the work-based experience? What is the purpose of each?

Task Number 48

Describe the importance of and opportunities for continuing education in the animal care field.

Definition

Description should include

- a list of the animal care careers requiring continuing education for licensure
- a summary of opportunities available for continuing education in animal care
- a description of how continuing education may help to advance the student in his/her career path.

Process/Skill Questions

- What are some of the opportunities for continuing education in the animal care field?
- Why is lifelong learning necessary in a medical field?
- How would failure to stay current with new products and procedures adversely affect performance in a chosen career?

Demonstrating Professional Conduct

Task Number 49

Identify the roles and responsibilities of professionals in the veterinary industry.

Definition

Identification should include the qualifications and duties of

- veterinary assistants
- veterinary technicians
- veterinarians.

Process/Skill Questions

- What are the ethical and legal consequences of performing duties outside of your certification?
 - What certifications does the Commonwealth of Virginia recognize?
-

Task Number 50

Describe the functions of local, state, and national professional organizations in the field of animal care.

Definition

Description should include

- the benefits of these organizations to their members, including Web sites and publications
- the advocacy professional organizations provide for their members
- the professional development opportunities they provide.

Process/Skill Questions

- What local animal care organizations exist in your area?
- Why are professional development opportunities important?

Task Number 51

Define prominent animal special interest groups.

Definition

Definition should include the mission statements and short descriptions of breed groups, as well as rescue and humane groups such as the Humane Society, PETA (People for Ethical Treatment of Animals), American Society for the Prevention of Cruelty to Animals (ASPCA) /Society for the Prevention of Cruelty to Animals (SPCA), AWI (American Welfare Institute), and NAIA (National Animal Interest Alliance).

Process/Skill Questions

- What is the difference between animal rights and animal welfare?
- Why might the goals of animal rights organizations not always be the same as the goals of veterinarians, who are concerned with animal welfare?
- Why do many veterinarians not support PETA and other such organizations?

Task Number 52

Explain legal and ethical issues in the veterinary medicine field.

Definition

Explanation should include issues related to

- use of anesthesia
- use of euthanasia
- handling of veterinary drugs
- privacy of patient records
- liability of veterinarians and clinics (e.g., in cases of animals biting clients in a clinic)
- unregulated breeding
- controversial procedures, such as tail docking, ear cropping, declawing, and debarking
- evaluation of various sources for obtaining animals (e.g., humane societies, pet shops, backyard breeders, rescue groups)
- issues involved in overpopulation, including feral colony management
- vaccination requirements, local licensing, and leash laws
- providing proper environment, diet, exercise, and grooming
- providing recommended health maintenance measures (e.g., required vaccinations, spay/neuter surgery, dental cleaning, deworming, external parasite prevention/treatment, routine blood work for geriatric animals)
- providing the appropriate care to animals showing signs of injury or illness.

Process/Skill Questions

- What is the difference between legal and ethical?
- Why are vaccination requirements, local licensing, and leash laws important enough to become parts of public policy or law?
- Why is the source for acquiring an animal an ethical issue?
- When ear cropping and tail docking are done for purely "cosmetic" reasons, why do they become ethical issues? Why would pet owners choose to have these surgeries performed? How can veterinary health professionals make society aware of alternatives to these surgeries?
- What professional ethical standards are appropriate for those in the animal health care industry?

Task Number 53

Describe the physical and mental demands and personal coping mechanisms of various animal-care professionals.

Definition

Description should include

- definitions of *job pressure* and *stress*, including potential physical and mental effects of such pressure and stress
- physically and emotionally demanding/stressful aspects of work in various animal-care professions (e.g., heavy lifting, working outdoors in inclement weather, facing the risk of being bitten/scratched/kicked/stepped on, assisting in euthanasia, dealing with demanding clients, handling animals with poor prognoses, burnout)
- identifying how a person's personality and/or lifestyle may affect susceptibility to stress
- identifying positive methods for managing difficult situations and day-to-day stress, such as exercising, getting adequate sleep, maintaining a healthy diet, spending time with friends/family, attending a place of worship, participating in hobbies/sports, or engaging in personal growth experiences
- explaining the consequences of negative coping mechanisms, such as substance abuse, and determining when professional help is required
- explaining the differences in working in a day practice versus working in an emergency clinic.

Process/Skill Questions

- Why is it important to evaluate the physical, mental, and emotional demands of working in an animal health care field before studying veterinary science?
- How can the physical and mental skills necessary for careers in animal health care be obtained?
- Why might the effectiveness of different personal coping mechanisms vary from person to person?

Understanding Safety and Sanitation

Task Number 54

Follow safety procedures for personal protection in the veterinary medical industry.

Definition

Following safety procedures should include

- identifying common dangers encountered in the veterinary field, including exposure to radiation
- identifying common safety precautions needed in a veterinary facility, including equipment and clothing used to make veterinary procedures safe for the animal health care workers and the patient.

Process/Skill Questions

- How can patients and their caregivers be harmed by equipment?
- What types of veterinary equipment may not be used by a person under 18?
- Why are age restrictions necessary regarding the use of equipment?
- What steps can a veterinary assistant or technician take to assure personal safety? To assure patient safety? To assure the safety of others who are interacting with the patient?

Task Number 55

Follow laboratory safety procedures.

Definition

Following safety procedures should include

- summarizing policies and procedures of the laboratory
- explaining the relationship between lab safety and lab organization
- adhering to lab organization standards
- adhering to safety regulations specific to the laboratory
- following safety precautions appropriate to the handling of chemicals, equipment, and sharps in the laboratory.

Process/Skill Questions

- How can veterinary workers be harmed by laboratory equipment?
- What types of veterinary laboratory equipment may not be used by a person under 18?
- Why are age restrictions necessary regarding the use of laboratory equipment?
- What steps can a veterinary assistant take to assure personal safety in the laboratory?

Task Number 56

Identify the importance of safety data sheets (SDS).

Definition

Identification should include

- the importance of having a hazardous materials inventory sheet for the animal health care facility
- the significance of having an SDS for each material on the inventory sheet
- essential components of the information included on an SDS
- the importance of locating, interpreting, and following SDSs.

Process/Skill Questions

- What might be the consequences of not having a hazardous materials inventory sheet for the animal health care facility?
- Why should an SDS for each material on the inventory sheet be readily available?
- What should a veterinary assistant do if there is a hazardous material in the facility's inventory but there is no SDS for it?
- Where should the SDSs be located?
- What type of information found on an SDS is generally not on a materials label?
- What should be done in the case of accidental exposure to chemicals?
- Why is it important to know the prescribed clean-up procedure for a spilled chemical?
- What constitutes an eye wash station? Where is the closest eye wash station to the student's work area? Why is it important to know the location of the closest eye wash station?
- How can you interpret and communicate the information included on an SDS?

Task Number 57

Explain the role and regulations of the Occupational Safety and Health Administration (OSHA) and the Virginia Department of Labor pertaining to veterinary science.

Definition

Explanation should include

- OSHA and Virginia Department of Labor regulations affecting the animal health care industry
- the purpose of OSHA and Virginia Department of Labor regulations in the industry.

Process/Skill Questions

- How can routine daily practices help a veterinary facility meet OSHA and Virginia Department of Labor regulations?
- What is management's responsibility with regard to OSHA and the Virginia Department of Labor regulations?
- How can compliance with OSHA and Virginia Department of Labor regulations contribute to effective veterinary facility management?
- What are some important characteristics of a safe work environment, according to OSHA?
- How can a veterinary assistant or technician help maintain a safe environment for all employees?
- How can noncompliance with OSHA regulations affect individual employees? How can noncompliance affect the veterinary facility?

- What is the responsibility of a veterinary assistant or tech if he/she notices noncompliance with regulations? How should the assistant or tech handle this type of situation?
- How can managers and employees keep up to date with OSHA regulations?

Task Number 58

Identify the physical, chemical, biological, and zoonotic hazards associated with the veterinary industry.

Definition

Identification should include

- common hazards to animal health care workers, including bites, scratches, back injuries, and the most common zoonotic risks
- protective methods and procedures against these hazards, including use of proper lifting techniques, proper handwashing techniques, and glove application/removal.

Center for Disease Control and Prevention (CDC) link:

<https://www.cdc.gov/niosh/topics/veterinary/default.html>

Process/Skill Questions

- Why should immunocompromised people avoid working with sick animals?
- What legal issues exist in educating clients about zoonotic diseases? What ethical issues are involved?
- Why is it important for a person who thinks they have been exposed to a zoonotic disease to seek medical attention immediately?

Task Number 59

Describe chemicals, including cleansers, disinfectants, and antiseptics, commonly used in veterinary practice.

Definition

Description should include

- types of chemicals commonly used in veterinary situations
- the purpose of each of these chemicals
- symbols used to identify common harmful chemicals
- safety precautions necessary when using each of these chemicals.

Process/Skill Questions

- Why is it important to be able to identify chemicals and their basic uses in a veterinary practice?
- How would you distinguish among a disinfectant, a sterilant, and a soap?
- What is a reagent? Why are reagents important in the veterinary facility?
- What safety precautions should be taken to ensure an animal does not come into contact with chemical disinfectants used in the facility? What chemicals are contraindicated for use near certain species?
- What are the potential dangers of using an improperly labeled product? An unlabeled product?
- What is the importance of secondary labels?
- What is meant by "allowing contact time"?
- What is the process for mixing a chemical? How does this process apply to specific chemicals in the veterinary facility or classroom?

Task Number 60

Explain the concept of asepsis in veterinary work.

Definition

Explanation should include

- definitions of the terms *asepsis*, *aseptic*, *disinfect*, *sterile*, and *sterilize*
- the differences between sanitizing, disinfecting, and sterilizing
- the differences between infection and contamination
- the differences between a disinfectant and an antiseptic
- the importance of asepsis in the practice of veterinary medicine
- principles of disease transmission, including the concept that microbes (e.g., Methicillin-resistant *Staphylococcus aureus* [MRSA]) present on surfaces can remain infective for periods of time
- the concept that sterilization uses physical or chemical processes to destroy all microbial life
- methods of sterilization commonly used in veterinary hospitals (e.g., steam in an autoclave, ethylene oxide)
- factors that could alter effective sterilization (e.g., presence of gross material, incorrect pressure/time during an autoclave cycle)
- recommended practices for maintaining a sterile field.

Process/Skill Questions

- How can contamination be prevented in a veterinary facility?
- How can a veterinary health care professional be the vector for cross contamination?
- How can the veterinary health care professional prevent contaminated wounds from becoming infectious?
- How long can some microbes remain infective on surfaces, including those of surgical instruments?
- Why is contact time crucial with the application of chemical disinfectants?
- Why are spores particularly difficult to destroy?

Understanding Companion Animal Species and Breeds

Task Number 61

Explain the origin of each companion animal species.

Definition

Explanation should include

- a brief scientific explanation for how animals may have become domesticated
- description of the taxonomy by which animals are classified.

Process/Skill Questions

- Why did humans domesticate animals?
- What is the reasoning behind the theory that dogs may have been domesticated long before cats?
- In what ways would the classification of a dog, cat, frog, and horse be similar? Different?
- What is the importance of binomial nomenclature (scientific names)?

Task Number 62

Identify the colors and other characteristics of breeds within each species.

Definition

Identification should include

- the general characteristics of purebreds according to breed standards set by professional organizations (e.g., American Kennel Club [AKC], Cat Fanciers' Association [CFA])
- industry-accepted terminology for colors of specific species and breeds.

Process/Skill Questions

- What are the two major groups of domesticated cats? How do they differ from each other?
- What are the seven groups of dogs? How do they differ from each other?
- What are the differences between a hamster and a gerbil?
- What are the five weight categories of rabbits?
- What is a bird?

Task Number 63

Identify breeding methods and rearing techniques of young species.

Definition

Identification should include

- the sexual maturity of companion animals
- responsibilities of companion animal breeders
- the age at which young animals should be weaned from their mother
- major ethical issues associated with breeding.

Process/Skill Questions

- If a person wanted to breed mice, what steps should be taken to ensure successful offspring?
 - What are some responsibilities of a dog breeder? How is dog breeding different from the breeding of other species?
 - What are some problems associated with overbreeding?
 - What steps would a breeder take to wean a young cat from its mother? Why is each step important?
-

Task Number 64

Describe appropriate housing and maintenance of companion animals.

Definition

Description should include

- identifying and correlating companion animals' physical, social, and mental needs to the type of housing and bedding appropriate for each
- explaining how failure to meet the physical and mental needs of companion animals can affect their health
- explaining the cleaning and maintenance techniques required.

Process/Skill Questions

- What type of equipment is necessary to maintain a healthy dog?
- How does one determine the appropriate cage size for a small rodent?
- What type of mental stimulation could one provide for a small mammal?
- How should a person's living situation and lifestyle affect the type of pet they choose?

Task Number 65

Explain species and/or breed suitability as a companion animal.

Definition

Explanation should include

- the characteristics of a good companion animal
- the suitability of various species and breeds for a potential owner.

Process/Skill Questions

- What characteristics of mice make them desirable lab animals?
- Why are some animals not recommended as pets?
- Why don't non-domesticated animals, such as a tigers, make good pets?
- Why do novelty pets generally end up in rescue facilities?

Understanding Animal Species and Breeds

Task Number 66

Describe behavior patterns of companion animals.

Definition

Description should include

- common social behaviors (e.g., feeding, predation, mutual grooming, dominance)
- species-specific communication patterns.

Process/Skill Questions

- Why is it important to understand how an animal reacts to threatening situations?
- How can a trainer use natural behavior patterns to teach new behaviors?
- How can a trainer use natural behaviors to make the animal more comfortable in its environment?

Task Number 67

Interpret companion animal behavior.

Definition

Interpretation should include the meanings of

- various body postures, including movement/position of head, eyes, ears, tail
- common vocalization patterns (e.g., barking, growling, hissing, howling, purring)
- behavioral changes, which may be due to the environment or an underlying medical condition.

Process/Skill Questions

- What can be learned by observing an animal's tail?
- How can one determine whether a behavioral change is due to an underlying medical condition or to something in the animal's environment?
- A dog that is showing his teeth is not necessarily snarling. What does the submissive grin signal?
- How does a dog demonstrate aggression? How should one respond to an aggressive dog?
- How does a cat demonstrate aggression? How should one handle an aggressive cat?

Handling Animals

Task Number 68

Identify unique handling considerations for species/breeds common in the veterinary field.

Definition

Identification should include

- classification of animals into small or large animal species
- the small and large animal species most commonly encountered in the veterinary field
- the prominent breeds within each species
- definitions of terminology associated with specific breeds (e.g., *mare*, *steer*, *whelping*, *queening*)
- characteristics that differentiate one breed from another, including behavior (e.g., feeding, herding instinct, pecking order, predator/prey instinct, maternal protective response) and genetic issues
- basic management practices for each breed.

Process/Skill Questions

- In what ways would the classification of a dog, cat, frog, and horse be similar? Different?
- What is the importance of binomial nomenclature (scientific names)?
- What are the two major groups of domesticated cats? How do they differ from each other?
- What are the seven groups of dogs? How do they differ from each other?
- What are the differences between a hamster and a gerbil?
- What are the five weight categories of rabbits?
- What is a bird?

Task Number 69

Identify equipment used for restraining animals.

Definition

Identification should include

- common situations, including medical procedures, requiring restraint of animals
- equipment appropriate for each situation
- safety issues applicable to the use of restraining equipment
- the benefits to the animal and to the handler of using restraining equipment.

Process/Skill Questions

- Why is a fetch pole considered the last resort when moving an animal?
- What is the benefit of using a cat sack?
- Why should the handler leave a cat's head out of the cat sack?
- What is an alternative way to restrain a cat if a cat sack is not available?
- In what way can a muzzle be considered a type of restraint?
- What is the difference between a cat muzzle and a dog muzzle?
- Why can't a dog muzzle be used on a cat?
- How can short-muzzle dogs be muzzled?
- What are dangers associated with use of muzzles?
- What are some signs to watch for that indicate that a muzzle should be removed immediately?

Task Number 70

Demonstrate respect for and safe treatment of classroom animals.

Definition

Demonstration should include

- handling animals gently with the minimum amount of restraint necessary
- ensuring that animals always have access to food, clean water, sufficient space, and a clean environment
- identifying basic equipment needed for safe treatment (e.g., collar, litter box, bowls)
- avoiding any action or inaction that is dangerous to the animals' health or life
- adhering to all guidelines provided by the instructor.

Process/Skill Questions

- Why should an animal never be left unattended on an examination table?
- Why is it important to use minimal restraint on an animal?
- What are ways to enrich the environment of an animal housed in a facility or classroom? Why is environmental enrichment important to the animal?
- How can an animal's social needs be met? Why is meeting its social needs important?

Task Number 71

Demonstrate safe and humane restraint and handling methods used for veterinary procedures.

Definition

Demonstration should include

- application of restraint in sternal, dorsal, and lateral recumbency
- restraint of a cat for venipuncture/injection using jugular, cephalic, and femoral holds
- restraint of a dog for venipuncture/injection using jugular, cephalic, and lateral saphenous holds
- restraint of a bird, reptile, or other small animal for venipuncture/injection
- restraint of livestock and/or horse for venipuncture/injection, including how to tie a quick-release knot (or description of procedure, if large animals unavailable).

Process/Skill Questions

- Why must animals frequently be restrained when undergoing health care?
- Why does lateral recumbency give the handler a considerable amount of control over the animal?
- What is the benefit of holding the legs closest to the table?
- What is the benefit of placing the forearm over the neck of the animal?

Task Number 72

Describe safe and humane transport of an animal.

Definition

Description should include

- safety precautions for handler, including use of appropriate body mechanics to prevent injury and use of a muzzle
- conditions that may require unusual lifting and carrying methods or that may preclude use of a muzzle (e.g., restricting airflow to an animal in shock)
- techniques for transporting injured animals
- various types of trailers and equipment utilized
- special techniques and/or equipment that may be employed (e.g., speaking calmly to the animal; supporting both pelvis and chest; use of stretcher, blanket, or towel sling).

Process/Skill Questions

- How might a dog be injured if it is carried incorrectly?
- Why is it important to maintain control of the dog's head when lifting the animal?
- How might lifting a puppy be different from lifting an adult dog?
- What considerations should a handler take when lifting a geriatric dog?
- Why is it important to secure the front legs while carrying a cat?

- How can the handler tell that his or her hand is positioned properly on the scruff?
- What are the dangers associated with carrying a cat?
- Why is it advised to carry a cat in a carrier when transporting the cat out of the home?

Task Number 73

Lift and carry a dog and cat.

Definition

Demonstration should include

- describing the methods for lifting
- describing the methods for carrying
- performing the lifting and carrying methods.

Process/Skill Questions

- In what types of situations might a veterinary assistant need to lift and carry a large dog?
- How does a veterinary assistant determine whether a second person is needed to help with the lifting and transporting of a large dog?
- How does a veterinary assistant determine whether a muzzle or head snare is appropriate when lifting and carrying a large dog?
- How can a dog be injured if it is carried incorrectly?
- Why is it important to maintain control of the dog's head when lifting the animal?
- How might lifting a puppy be different from lifting an adult dog?
- What considerations should a handler take when lifting a geriatric dog?
- Why is it important to secure the front legs while carrying a cat?
- How can the handler tell that his or her hand is positioned properly on the scruff?
- What are the dangers associated with carrying a cat?
- Why is it advised to carry a cat in a carrier when transporting the cat out of the home?

Task Number 74

Move a nonaggressive dog and cat into and out of cage.

Definition

Demonstration should include

- describing the procedure for moving with minimal stress to the animal
- performing the moving procedures.

Process/Skill Questions

- Why should the handler use a leash when removing a dog from a cage?

- Why is it important to watch a dog's body language while attempting to move the animal into or out of a cage?
- How can a handler prevent an excited dog from leaping out of the cage?
- What is the proper way to carry a nonaggressive cat?
- What factors might cause a nonaggressive cat to become aggressive during movement into or out of a cage?
- What steps should be taken if a cat begins to show aggression?

Task Number 75

Identify techniques for handling an aggressive dog and cat.

Definition

Identification should include describing the steps needed to handle an aggressive animal without causing additional stress to the animal or injury to the handler.

Process/Skill Questions

- How is a blanket or towel a useful tool when dealing with aggressive animals?
- What may cause a seemingly friendly animal to become aggressive in a crate?
- How can talking softly help calm the animal?
- Why should the handler avoid eye contact with an aggressive dog?
- A dog that is showing his teeth is not necessarily snarling. What does the submissive grin signal?
- How does a cat demonstrate aggression? How should one handle an aggressive cat?

Task Number 76

Muzzle a dog and cat.

Definition

Demonstration should include the following:

- identifying types of muzzles
- explaining when the use of a muzzle is appropriate and when a muzzle should be removed
- describing the methods for applying muzzles
- performing the methods for applying muzzles.

Process/Skill Questions

- Can a muzzle be considered a type of restraint? Why, or why not?
- What is the difference between a cat muzzle and a dog muzzle?
- Can a dog muzzle be used on a cat? Why, or why not?
- How can short-muzzled dogs be muzzled?
- What are dangers associated with use of muzzles?
- What are some signs to watch for that indicate that a muzzle must be removed immediately?

Task Number 77

Restrain a dog and cat in lateral recumbency.

Definition

Demonstration should include

- describing situations in which restraining in lateral recumbency is appropriate
- explaining the method for restraining in lateral recumbency
- performing the method for restraining.

Process/Skill Questions

- Why does lateral recumbency give the handler a considerable amount of control over the animal?
- What is the benefit of holding the legs closest to the table?
- What is the benefit of placing the forearm over the neck of the animal?

Task Number 78

Describe the use of various types of equipment for restraining a dog and cat.

Definition

Description should include

- identification of commonly used equipment (e.g., fetch pole, cat sack, net, Snappy Snare, towels, blankets)
- explanation of situations in which use of each piece of equipment is appropriate
- the steps/methods of using each piece of equipment.

Process/Skill Questions

- Why is a fetch pole considered the last resort when moving an animal?
- What is the benefit of using a cat sack?
- Why should the handler leave a cat's head out of the cat sack?
- What is an alternative way to restrain a cat if a cat sack is not available?

Task Number 79

Describe how to move exotic species into and out of cages.

Definition

Description should include

- the procedures for moving with minimal stress to the animal and without injury to the handler
- precautions to take when an animal is aggressive.

Performing Skin and Coat Care

Task Number 80

Check an animal for fleas.

Definition

Checking should include

- recognizing evidence of fleas (e.g. live fleas, flea dirt)
- describing the relationship between animal health and flea control (e.g., tapeworms, flea allergic dermatitis)
- identifying shampoos that are compatible with current flea and tick treatments and medications
- using a flea comb
- describing the importance of pet owner education regarding flea control.

Process/Skill Questions

- Why are fleas dangerous to animals? To humans?
- Why is it so important for pet owners to be educated about flea control?
- How do flea control products work?
- How have flea control products evolved over the past 50 years?

Task Number 81

Explain tick removal and prevention.

Definition

Explanation should include

- tick-prevention methods
- the importance of wearing gloves to avoid touching ticks
- standard steps in the tick-removal process
- standard procedures for tick disposal.

Process/Skill Questions

- Why is it important to wear gloves when removing a tick?
- What is Lyme disease? Why is it dangerous? What precautions can be taken to avoid contracting it?
- What should be done if the head of the tick remains in the skin when the rest of the tick is removed?

Task Number 82

Prepare shampoos and creme rinses.

Definition

Preparing shampoos and creme rinses should include

- selecting shampoo appropriate to the animal's skin type
- diluting shampoo, if needed, according to manufacturer's directions
- preparing creme rinse according to manufacturer's directions
- returning all equipment to its proper place when the task is done.

Process/Skill Questions

- What is the difference between a shampoo and a dip? Why is each important?
- Why is it important to dilute shampoo according to label directions?
- Why is it important that the diluted shampoo be properly labeled?
- What is the procedure for mixing a shampoo that has a label reading "1:10 dilution"?

Task Number 83

Bathe an animal.

Definition

Bathing animal should include

- exploring safety precautions for bathing an animal
- identifying necessary supplies and equipment
- selecting a shampoo appropriate to the skin type of the animal
- preparing the bath area
- shampooing and rinsing the animal
- removing hair from the drain
- cleaning and disinfecting the workstation when complete.

Process/Skill Questions

- What precautions should be taken when bathing a dog or cat? Why?
- What factors should be considered when selecting a shampoo for the dog or cat?
- What are possible consequences of not thoroughly rinsing the shampoo from the coat?
- How is water temperature important when bathing an animal?

Task Number 84

Dry an animal.

Definition

Drying should include

- explaining why fluff drying is more appropriate for certain breeds/coat types
- describing brushing techniques for achieving fluffiness and preventing mats
- demonstrating brushing techniques for fluff drying
- explaining situations when fluff drying is not appropriate
- explaining situations when air drying or cage drying is best
- applying special safety considerations when dealing with brachycephalic and geriatric animals.

Process/Skill Questions

- What are the similarities and differences between fluff drying a dog and a cat?
- Is fluff drying appropriate for all dogs and cats? Why, or why not?
- Why is proper fluff drying important?
- What drying techniques other than fluff drying can be used? In what situations are these other techniques appropriate?
- Why must animals being cage-dried be constantly monitored?
- What are the dangers associated with using a power dryer?
- What breeds are best suited to air drying?
- What steps can be taken to ensure the safe use of cage dryers?

Task Number 85

Use grooming tools and equipment.

Definition

Demonstration should include

- demonstrating use of each piece of equipment in accordance with manufacturers' guidelines
- following all safety precautions to avoid injury to the animal and handler and to maintain a safe work environment
- cleaning and sanitizing tools according to manufacturers' instructions after use.

Process/Skill Questions

- How might improper sanitizing lead to the spread of diseases or parasites?

- What grooming tools can produce cuts on a pet? How can cuts be avoided?
- How can using the wrong brush lead to brush burn?

Task Number 86

Trim an animal's nails.

Definition

Trimming nails should include

- using the appropriate style and size nail clippers
- identifying the quick to avoid cutting into it
- applying a coagulant to stop the bleeding if the quick is cut
- filing nails that have sharp edges
- informing supervisor and/or owner if the quick is cut.

Process/Skill Questions

- Why do animals have nails?
 - What are the signs that an animal's nails should be trimmed?
 - What precautions must be taken when trimming an animal's nails? Why?
 - What is the quick of the nail? Why must it be protected?
 - If the animal has darkly pigmented nails, how can one avoid cutting into the quick when the nails are trimmed?
 - What are some of the dangers of having long nails on a pet?
 - What are the arguments for and against declawing a pet?
-

Task Number 87

Brush and/or demat an animal's coat.

Definition

Brushing and/or dematting coat should include

- comparing types of brushes, mat combs, and mat rakes
- explaining the correlation between coat type and equipment used
- listing products used to aid dematting (e.g., detangler)
- describing differences in animal skin types
- describing the precautions that need to be taken when dematting animals
- explaining the importance of dematting prior to bathing
- brushing out coat according to accepted guidelines.

Process/Skill Questions

- Why is it important to brush and demat a pet animal?
 - What equipment is needed to brush and demat an animal's coat?
 - Why should a pet's coat be brushed and dematted prior to bathing?
 - What type of brush should be used on a Dalmatian? Why?
 - Why should scissors be avoided when cutting out a mat? What should be used instead? Why?
 - What is meant by line brushing?
 - What is a common mistake most pet owners make when brushing their pet? Why is it a mistake?
-

Task Number 88

Clean an animal's ears.

Definition

Cleaning ears should include

- explaining signs of ear mites and ear infections
- using appropriate ear cleaning solution and materials
- wiping the outer ear clean of cerumen and exudates
- making note of whether there is any unusual or excessive odor
- identifying breeds that routinely need ear plucking.

Process/Skill Questions

- What are the symptoms of common conditions and ailments that can affect an animal's ears?
 - How are these ailments treated?
 - What precautions should be taken when cleaning and plucking an animal's ears? Why?
 - Why is it dangerous to probe deep in the animal's ear with a cotton swab?
 - What are the signs and symptoms of an ear infection? How is an ear infection treated?
 - What are the possible results of not treating an ear infection?
 - What are ear mites? Why must they be treated?
 - Why do the ears of some breeds need to be plucked?
 - What is the function of ear powder?
-

Task Number 89

Clip an animal's coat with electric clippers.

Definition

Clipping should include

- using clippers only in the direction of the lay of the hair, unless otherwise directed

- using cooling blade lubricant to keep blades from overheating
- selecting blades to fit hair length and coat condition
- removing mats with clippers if they cannot be combed out
- performing sanitary clips, as necessary
- guarding against injury to animal (e.g., pulling loose skin, razor burn)
- cleaning, sanitizing, and/or disinfecting clippers and blades
- storing clippers and blades after use
- informing supervisor and/or client if animal injury occurs.

Process/Skill Questions

- What areas are shaved in a sanitary clip?
 - What is the reason for performing sanitary clips?
 - What can be done for an animal that has developed razor burn?
-

Task Number 90

Perform final comb-out.

Definition

Performing final comb-out should include

- combing animal according to accepted guidelines
- evaluating the grooming process for completeness.

Process/Skill Questions

- Why is it important to have a second party inspect animal before it is discharged?
 - What is the purpose of coat conditioner?
 - What are safety precautions for using aerosol sprays around animals?
 - Why might a groomer choose to add a bow to the collar or a bandana to the neck of the pet being discharged?
-
-

Performing Maintenance Functions

Task Number 91

Explain how to clean, sanitize, disinfect, and store laundry.

Definition

Explanation should include

- identifying required supplies and equipment
- demonstrating standard procedures for washing/disinfecting towels, smocks, and other items in the washer
- drying items in the dryer in accordance with recommended procedures
- sorting and folding items
- storing items in proper locations for reuse
- disinfecting and sanitizing equipment in accordance with manufacturer's guidelines.

Process/Skill Questions

- What safety procedures should a veterinary assistant follow when handling soiled laundry? Why?
- Why is it important to not overload the washer? The dryer?
- Why is it important to empty the lint catcher in the dryer on a regular basis?
- What is the purpose of dryer sheets?
- What methods for disinfecting washable veterinary items can be employed?
- How can clean laundry be folded and stored in such a way that it is protected from contaminants?

Task Number 92

Clean and disinfect sink/tub.

Definition

Cleaning and disinfecting should include

- wearing personal protective equipment (PPE)
- selecting cleaning and disinfecting products and equipment
- following standard procedures for cleaning and disinfecting, including rinsing well and keeping drains clear.

Process/Skill Questions

- Why is it important to clean and disinfect a tub after each use?
- Why is it important to keep the drain strainers in place while cleaning the tub?

Task Number 93

Clean and disinfect small animal quarters.

Definition

Cleaning and disinfecting should include

- wearing personal protective equipment (PPE)
- selecting cleaning and disinfecting products and equipment
- following standard procedures for cleaning and disinfecting
- ensuring the cleaning of all five surfaces (top, bottom, front, sides, and back) of cages/kennels and equipment.

Process/Skill Questions

- How often should small animal cages be cleaned?
- Why is it important to clean and disinfect a cage/kennel after each use?
- Why should animals *not* be put in cages/kennels that have not been cleaned since last use?
- Why should items in the cage be cleaned in addition to the cage itself?
- What is the benefit of placing newspaper at the bottom of the kennel?
- Why is cedar bedding not recommended for rabbits or rodents?

Task Number 94

Perform partial water changes and filter changes on aquariums.

Definition

Performance should include wearing gloves and following standard procedures for changing the water and filters, taking care not to completely drain the tank.

Process/Skill Questions

- How often should a filter be replaced in a fish tank?
- When changing the water in a fish tank, why is it important to only partially drain the tank?

Task Number 95

Sanitize animal treatment area.

Definition

Demonstration should include

- wearing all personal protective equipment (PPE) required for the given task (e.g., gloves, respirators, ear protection)
- choosing products and equipment
- following the standard procedures for sanitizing animal treatment areas.

Process/Skill Questions

- Why should an examination table be sanitized between each use?

- What are some possible problems that a facility may encounter if sanitation is ignored?
- What steps can be taken to minimize exposure to fumes for people and animals?

Task Number 96

Clean floors.

Definition

Cleaning should include

- wearing all required personal protective equipment (PPE)
- selecting the cleaning products and equipment
- following standard procedures including vacuuming, spot sweeping, spot mopping, and disinfecting.

Process/Skill Questions

- Why is it important to spot sweep and/or vacuum prior to mopping the floor?
- Why is it important to clean the mop head after use?
- What is the importance of changing the mop water frequently?

Task Number 97

Change trash liner.

Definition

Change of trash liner should include following standard procedures for replacing and disposing of the liner.

Process/Skill Questions

- Why should a trash liner always be used in the trash container?
- What are some potential problems associated with overfilling a trash container?

Task Number 98

Describe the various types of disposal methods within a facility.

Definition

Description should include standard OSHA disposal procedures for biomedical waste, sharps, and other hazardous materials.

See also "[Youth@Work-Talking Safety Curriculum for Virginia](#)" (The National Institute for Occupational Safety and Health [NIOSH])

Process/Skill Questions

- Why is it important to have a labeled sharps container?
- Why should biomedical waste be labeled?

Task Number 99

Dispose of hazardous materials.

Definition

Disposal should include

- identification of hazardous materials and their potential dangers
- wearing PPE
- following OSHA guidelines for disposing of hazardous materials, including empty containers.

See also "[Youth@Work-Talking Safety Curriculum for Virginia](#)" (The National Institute for Occupational Safety and Health [NIOSH])

Process/Skill Questions

- What is the meaning of the term *SDS*? Why is an SDS important?
- Why should one never reuse a container that once contained a hazardous material?
- What types of hazardous materials are commonly encountered in veterinary work? How is each hazardous to workers?
- What is PPE? What types of PPE are needed when handling hazardous materials in veterinary work?
- Why is proper storage of hazardous materials important? How can it be accomplished?
- Why is proper disposal of hazardous materials important? How can it be accomplished?

Task Number 100

Provide appropriate types of bedding.

Definition

Provision should include

- describing types of bedding available for small animals
- explaining the differences among the various types
- explaining the advantages and disadvantages of appropriate types for various species.

Process/Skill Questions

- What is the appropriate bedding for a guinea pig?
- Is there a benefit to using pine bedding over recycled paper bedding? Why, or why not?
- What respiratory problems are associated with the use of cedar and pine shavings?

Understanding Veterinary Medical Terminology

Task Number 101

Explain formation of veterinary medical terminology.

Definition

Explanation should include

- common prefixes and their meanings
- common suffixes and their meanings
- the Latin adjectives and their meanings
- common roots and combining forms of terminology and their meanings.

Process/Skill Questions

- How are common prefixes, suffixes, and roots combined to form veterinary medical terminology?
- What Latin adjectives are commonly applied to veterinary medical terminology?
- Why is it important to understand how veterinary medical terminology is formed? Why is understanding this superior to simply memorizing all terms?

Task Number 102

Identify basic veterinary medical terms and abbreviations.

Definition

Identification should include

- listing the veterinary medical terms and abbreviations most commonly encountered
- stating the definition of each term and abbreviation.

Process/Skill Questions

- Why is the use of abbreviations necessary in the field of veterinary medicine? What would be the result of not using abbreviations?
- Why is it important to know the meanings of basic veterinary medical terms and abbreviations?
- What could be the consequences of not knowing the meanings of such terms and abbreviations?
- How can a veterinary assistant make sure that he/she knows all basic veterinary medical terms and abbreviations?

Task Number 103

Demonstrate use of veterinary medical terminology.

Definition

Demonstration should include

- using veterinary medical terminology correctly to
 - describe the condition(s) being addressed
 - relay pertinent information to other caregivers of the animal
 - chart the condition of the animal for medical records
- interpreting medical instructions and other notations containing such terminology
- clarifying such terminology to ensure that animal owners (particularly horse owners) fully understand the condition and the treatment to be administered.

Process/Skill Questions

- How might veterinary medical terminology differ when charting information or speaking to the owner or to other caregivers of the animal?
- Why is it important to clarify the terminology for the owner when explaining the animal's condition?
- How can a veterinary assistant know how to clarify the terminology for the owner or to other caregivers? What techniques are effective for such clarification?
- Why is it essential when charting to use correct, appropriate terminology?

Task Number 104

Describe anatomical and directional terminology.

Definition

Description should include

- body planes
- anatomical positioning descriptors (*sternal, lateral*)
- relative-positioning terms (e.g., *cranial, caudal, proximal*)
- species-specific terms (e.g., *croup, withers, stifle, dewlap*).

Process/Skill Questions

- How is the anatomy of all animals similar?
- What are some major variations among the anatomies of different animals?
- What is the body cavity that houses the heart and lungs?
- What is the body cavity that lies caudal to the thorax?
- How can the distal end of one bone be adjacent to the proximal end of another bone?

Understanding Anatomy and Physiology

Task Number 105

Describe the relationship among cells, tissues, organs, and organ systems.

Definition

Description should include

- the following concepts:
 - Groups of cells form tissues
 - Groups of tissues form organs
 - Groups of organs form organ systems
- the basic tissue types (i.e., epithelial, connective, muscle, and nerve) and the characteristics of each.

Process/Skill Questions

- What are the parts of the cell?
- What are the functions of each cell component?
- What are the three types of muscle tissue? What are the basic characteristics of each?
- Using the stomach as an example, how can one organ be comprised of several different tissue types? How do these different tissue types affect the function of the organ?

Task Number 106

Explain the anatomy and physiology of the skeletal system.

Definition

Explanation should include

- identification of the components of the skeletal system
- the function of the skeletal system
- common disorders of the skeletal system, including types of fractures.

Process/Skill Questions

- What are the parts of a bone?
- What are the main functions of bones?
- How are bones attached to other bones?
- What are the names of the three types of cartilage, and where is each type located?

Task Number 107

Explain the anatomy and physiology of the muscular system.

Definition

Explanation should include

- identification of the components of the muscular system, including the major muscle groups and the types of muscles
- the function of the muscular system
- common disorders of the muscular system.

Process/Skill Questions

- How would you distinguish among the functions of the muscular system?
- What is the basic unit of muscle tissue?
- What are the three types of muscle tissue?
- How would you distinguish among the three types of muscle tissue and summarize the functions of each type?
- How are muscles attached to bones?
- How would you differentiate between antagonistic muscles and synergistic muscles?
- What is the role of the nervous system in muscle function?
- What are the energy sources for muscle contraction?
- What are the types of muscle contractions?

Task Number 108

Explain the anatomy and physiology of the respiratory system.

Definition

Explanation should include

- identification of the components of the respiratory system, including the upper and lower respiratory systems
- the function of the respiratory system
- common disorders of the respiratory system.

Process/Skill Questions

- What is the process of pulmonary ventilation?
- How would you differentiate between external and internal respiration?
- What is the name of each organ of the respiratory system?
- How can the gas exchange among lungs, blood, tissues, and cells be explained?
- How are oxygen and carbon dioxide transported in the blood?
- What are the factors that regulate respiration, and how do they work?

- What are common problems associated with the respiratory system in animals?

Task Number 109

Explain the anatomy and physiology of the digestive system.

Definition

Explanation should include

- the different types of digestive systems found in animals and the components of each type
- the function of the digestive system and of each organ within the system
- common disorders of the digestive system.

Process/Skill Questions

- What is the difference between a monogastric and ruminant digestive system?

Task Number 110

Explain the anatomy and physiology of the nervous system.

Definition

Explanation should include

- identification of the components of the nervous system, including the central and peripheral nervous systems
- the function of the nervous system
- common disorders of the nervous system.

Process/Skill Questions

- How would you describe the structure and function of a neuron?
- What is a synapse?
- What are the classifications of neurons?
- How would you describe transmission, including neurotransmitters and transmission at a synapse?
- How do you identify the three types of nerves, and how do they differ?

Task Number 111

Explain the anatomy and physiology of the circulatory system.

Definition

Explanation should include

- identification of the components of the circulatory system, including the major parts of the heart and the path of blood flow throughout the heart
- the function of the circulatory system
- common disorders of the circulatory system.

Process/Skill Questions

- What are the normal constituents of blood, and what are their functions?
- What is the relationship of plasma to the solvent ability of blood?
- What are the functions of blood?
- What are the four characteristics of blood?
- What are the steps in blood clotting, including the role of platelets?
- What is the route of blood circulation through the cardiovascular system?
- What is coronary circulation, and why is it critical even though the heart chambers contain blood?
- What are the different parts of the cardio cycle?

Task Number 112

Explain the anatomy and physiology of the urinary system.

Definition

Explanation should include

- identification of the components of the urinary system, including differences between the male and female urinary tracts
- the function of the urinary system, including the three phases of urine production
- common disorders of the urinary system.

Process/Skill Questions

- What is the function of the kidneys?
- What factors affect kidney function and urine formation?
- How would you describe the formation of urine, including flow through the kidneys?
- Why is the urinary system essential to an animal's health?
- How would you explain the kidneys' role in maintaining acid-base balance?
- What are the normal characteristics of urine?
- How would you describe the normal constituents of urine?
- What lab tests are used to evaluate urine including the normal expected ranges of each test?
- What are the consequences when waste is not effectively removed from the body?

Task Number 113

Explain the anatomy and physiology of the reproductive system.

Definition

Explanation should include

- identification of the components of the male reproductive system and the female reproductive system
- the function of each reproductive system
- common disorders of each reproductive system.

Process/Skill Questions

- What are three diseases that occur in the female reproductive system of animals?
- What are three diseases that occur in the male reproductive system of animals?

Task Number 114

Explain the anatomy and physiology of the integumentary system.

Definition

Explanation should include

- identification of the components of the skin
- the function of the integumentary system
- common disorders of the integumentary system.

Task Number 115

Explore additional body systems.

Definition

Exploration should include

- identification of other body systems (e.g., endocrine, lymphatic)
- identification of the components of these systems
- the function of these systems
- common disorders of these systems.

Process/Skill Questions

- What is a disease that could occur in the lymphatic system of animals?

Understanding Animal Nutrition

Task Number 116

Identify the six basic nutrients and their functions in maintaining animal health.

Definition

Identification should include

- the functions of protein, carbohydrates, lipids (fats), water, vitamins, and minerals
- common sources of these nutrients in an animal's diet
- the symptoms and treatment of common nutrient deficiencies and excesses
- purposes of feeding various prescription diets (e.g., diabetic, urinary, weight management).

Process/Skill Questions

- What effect does each of the six basic nutrients have in metabolic function?
- What are possible sources of these basic required nutrients?
- What problems may develop if nutrient requirements are not met?
- How is it possible to ensure a sufficient amount of each basic nutrient in an animal's diet?
- Why is water such an important part of an animal's diet?
- What is meant by the term *balanced diet*?
- Why should an animal be on a commercial food specific for its species, age, and health status?
- Why do puppies need more protein and calories than an adult dog?
- What are signs of common dietary deficiencies?

Task Number 117

Calculate the maintenance energy requirement (MER) for an animal.

Definition

Calculation should include using the formula $MER = 132 \times (\text{body weight in kilograms})^{0.75}$ to determine the amount of feed energy (calories) needed per day to maintain the animal's body weight without change and to support necessary metabolic functions.

Process/Skill Questions

- What factors must be considered in determining the nutritional requirements for basic metabolic function?
- Why is calculating the maintenance energy requirement (MER) for an animal important?
- How might overfeeding lead to a problem for the animal?
- How do the nutritional requirements of an animal vary in relation to its age and life functions of growth, development, and reproduction?

Task Number 118

Determine the body condition of an animal.

Definition

Determination should include using a body condition score (BCS) chart, where appropriate, to evaluate body fat through

- visual assessment from the top and side
- palpation of waist, ribs and abdominal tuck and dorsal spinous processes at tail base
- signs of malnutrition.

Process/Skill Questions

- How can obesity be dangerous to an animal?
 - How can an animal owner prevent obesity in his/her pet?
 - Why should pets not be fed table scraps?
-

Task Number 119

Determine the nutritional value of animal feeds as they relate to dietary requirements of life stages.

Definition

Determination should include

- identifying the parts of a feed label
- identify the optimal diet for each life stage
- interpreting the information on feed labels
- analyzing information on feed labels to verify claims
- identifying the legal requirements of specific parts of the label
- identifying the role of the U.S. Food and Drug Administration (FDA) and the Association of American Feed Control Officials (AAFCO) in these legal requirements.

Process/Skill Questions

- How can the information on feed labels be verified?
- What types of tests can be performed to sample feed for nutrients?
- What equipment and supplies are necessary to conduct these tests?
- What safety procedures should be observed during testing?

Task Number 120

Identify marketing strategies of feed companies.

Definition

Identification should include

- describing different types of product-marketing strategies
- comparing advertisement claims to contents listed on feed labels
- evaluating advertisements to determine validity of marketing strategies, including analysis of ambiguous phrases (e.g., “all natural,” “free range”) and their legal meanings
- determining the cost per ration.

Process/Skill Questions

- What organizations regulate the recommended nutritional requirements of animal feeds? What is the purpose of such regulation?
- What is the difference between a "grocery store" brand food and a premium food?
- Why are premium foods generally better for an animal?

Performing Clinical Exams

Task Number 121

Explain the importance of routine physical exams.

Definition

Explanation should include the importance of

- obtaining patient history
- using a systematic approach for completing the exam
- maintaining comprehensive, concise records according to accepted practices
- using diagnostic tools such as stethoscope, thermometer, otoscope, ophthalmoscope, and microscope
- practicing preventive medicine
- implementing a long-term healthcare program.

Process/Skill Questions

- Why should a routine physical exam be conducted?
- What procedures are performed in a routine physical exam?
- What skills and equipment are necessary for a routine physical exam?

Task Number 122

Identify the characteristics of healthy vs. unhealthy animals.

Definition

Identification should include

- common visible, physical signs of healthy and unhealthy animals (e.g., condition of coat, teeth, eyes, feces, urine)
- common observable behaviors of healthy and unhealthy animals, including ways that different species show they are in pain
- other health indicators achieved through lab tests.

Process/Skill Questions

- What are the distinguishing characteristics of healthy animals? What might the absence of these characteristics indicate?
 - Why should physical signs, observable behaviors, and lab tests be used in conjunction to determine the health of an animal? What might be the consequences of not using one of these three indicators?
 - What lab tests are normally conducted on an animal during a physical examination?
 - Is a veterinarian at a great disadvantage in diagnosing illnesses in a patient compared to a human doctor? Why, or why not?
 - What type of lab tests would be conducted on an animal during a physical examination?
-

Task Number 123

Describe the method of assessing animal health.

Definition

Description should include

- ways to communicate effectively with the owner to obtain a thorough medical history of a patient
- the steps used in a total assessment of an animal
- how to identify abnormalities in physical state or behavior (e.g., food/water intake, evidence of pain)
- the determination of the probable illness indicated by the abnormalities
- the determination of the likely cause(s) of the illness
- the reasons why only veterinarians, not veterinary assistants or technicians, should make final diagnoses.

Process/Skill Questions

- What types of questions should be asked when obtaining a thorough medical history of a patient?
- What steps should be followed when obtaining accurate vital signs?
- What procedures are followed when conducting a thorough physical exam?
- What could be the negative consequences of allowing a veterinary assistant or technician to diagnose illnesses? Why?

Task Number 124

Demonstrate the use of diagnostic tools.

Definition

Demonstration should include

- explaining the procedure for using each tool (e.g., stethoscope, thermometer, otoscope, ophthalmoscope, microscope)
- using each tool according to the proper procedure to gather data
- recording the collected data in the standard, accepted format
- cleaning and sanitizing the tools.

Process/Skill Questions

- What physiological sounds can be assessed with the use of a stethoscope?
- What are the parts of the stethoscope and their functions?
- Why is an otoscope used?
- What are the criteria for selecting the appropriate speculums for the otoscope?
- What position is necessary for accurate assessment of the ear?
- What could be the consequences of not using a diagnostic tool in accordance with the proper procedure?
- What does the ophthalmoscope assess?
- What are the parts of the ophthalmoscope?
- How is the ophthalmoscope properly adjusted to obtain an accurate assessment?

Task Number 125

Weigh and/or measure animal.

Definition

Demonstration should include

- explaining reasons and techniques for weighing and measuring animals
- identifying the type of measurement system (e.g., metric, avoirdupois), scales, and tools to be used
- transporting the animal to the scale, using techniques appropriate for the animal
- measuring animal's height and length as needed, using the appropriate measuring tool
- recording the collected data
- cleaning and sanitizing the scales.

Task Number 126

Measure and evaluate vital signs.

Definition

Demonstration should include

- identifying the vital signs that should be measured—i.e. temperature, pulse, respiration
- explaining the significance of each vital sign
- selecting the appropriate devices for measuring the vital signs
- following standard procedures for obtaining the vital signs
- recording measurements
- comparing measurements to normal values
- assessing vital signs for abnormalities.

Task Number 127

Evaluate mucous membranes and capillary refill time (CRT).

Definition

Evaluation should include

- explaining the appearance of healthy mucous membranes
- explaining the color variations of unhealthy membranes and their meanings
- explaining the concept of capillary refill time (CRT)
- demonstrating the procedure for measuring, assessing, and charting CRT
- explaining the importance of alerting the veterinarian to any abnormalities.

Process/Skill Questions

- What is the purpose of measuring capillary refill time?
-
-

Handling Death and Dying

Task Number 128

Explain the concept of euthanasia.

Definition

Explanation should include

- a definition of *euthanasia*
- a summary of the history of euthanasia
- commonly used alternative language that may lead to client confusion and/or distress.

Process/Skill Questions

- What is the derivation of the word *euthanasia*?
- What euphemisms are commonly used in place of the term *euthanasia*?
- Why might euphemisms lead to confusion?
- When might euphemisms be appropriate? Inappropriate?

Task Number 129

Describe situations that may warrant euthanasia.

Definition

Description should include examples of

- untreatable/irreversible medical conditions that cause suffering (e.g., uncontrollable pain or distress, inability to eat or drink, inability to breathe without difficulty, organ failure to gradual build-up of toxins)
- irreversible, intolerable behaviors (e.g., unmanageable viciousness toward humans or other animals, other behavior that poses a serious health risk to humans or other animals).

Process/Skill Questions

- Under what circumstances might euthanasia be an option for a pet with cancer?
- Under what circumstances might the government require an animal be euthanized?
- Why must an animal that has bitten a human be quarantined before it is euthanized?
- Why might an entire herd have to be euthanized if some of the animals test positive for a disease?
- Why is animal euthanasia an ethical issue?
- Why do some veterinarians refuse to euthanize healthy animals?
- Why is it imperative to have the legally required documentation in order before performing euthanasia?

Task Number 130

Describe aspects and accepted procedures and methods of humane euthanasia.

Definition

Description should include

- the participants involved in the decision to perform euthanasia
- legal and ethical issues concerning animal euthanasia (e.g., proof of animal ownership, release from responsibility)

- documentation required prior to performing euthanasia
- factors to consider when scheduling an appointment for euthanasia
- pharmacological agents and other methods of euthanasia that may be used
- species suitability pertaining to methods of euthanasia
- safety and restraint procedures that may be necessary
- behaviors/physiological changes the animal may exhibit during euthanasia.

See also ["Guidelines for the Euthanasia of Animals"](#) (American Veterinary Medical Foundation)

Process/Skill Questions

- Who decides when an animal should be euthanized? Why?
- Who performs euthanasia? Why?
- Under what conditions is a gunshot considered an acceptable means of euthanasia? What are some potential dangers of using this method?
- When selecting a method of euthanasia, what is the primary consideration with regard to the animal?
- What is the most common method of euthanasia? Why is it used so frequently?
- How does the penetrating captive bolt cause death of an animal?

Task Number 131

Explain how veterinary personnel can give support and assistance to a grieving client.

Definition

Explanation should include

- the physical and psychological signs of stress in a client during the grieving process, including the five stages of grief (denial, bargaining, anger, guilt, acceptance)
- effective terms and phrases for helping a client deal with grief
- effective methods for dealing with stress and grief (e.g., memorializing a pet, spending time with friends)
- local support services and hotlines for grief counseling
- content to include in an effective sympathy letter.

Process/Skill Questions

- When is the best time to schedule euthanasia in the hospital?
- Why might a client stop using an animal hospital after they have had a euthanasia performed there? What can be done to help such a client minimize such feelings?
- What are some available aftercare options?

Task Number 132

Describe accepted methods of handling animal remains.

Definition

Description should include

- the reasons for and importance of treating animal remains with respect
- how to prepare the remains for viewing by the client
- acceptable methods of disposing of animal remains (e.g., burial, cremation, rendering, incineration), including a comparison of their advantages and disadvantages and local regulations affecting such disposition
- following proper biosecurity methods for handling animal remains
- techniques for helping pet owners cope with loss.

Process/Skill Questions

- Why do some people request to have their pet's ashes?
- Animals that are euthanized by shelters are usually disposed of in what manner?
- If a pet is buried, what factors should be taken into consideration?

Performing Office Functions

Task Number 133

Maintain veterinary records.

Definition

Maintenance should include

- explaining the types, purposes, organizational principles, and legal aspects of veterinary records
- explaining the importance of accuracy and consequences of inaccuracy in veterinary records
- describing different types of filing systems and file management
- applying principles of file management, according to accepted practices
- listing types of information generally included in veterinary records
- setting up and keeping accurate, up-to-date, legible, correctly spelled veterinary records, according to facility-specific procedures
- explaining the importance of maintaining confidentiality of all recorded information.

Process/Skill Questions

- Why do veterinary records need regular maintenance? Why is it important to update client records after each visit?

- What are various ways that records can be organized? What are the advantages and disadvantages of each organizational approach?
- What are the potential ramifications of misfiling or misplacing a records?
- Why is it said that “if it isn’t in the records, it didn’t happen”?
- In what ways are computer files and traditional paper files similar? How are they different? Is one better than the other? Why, or why not?
- What environmental factors should be considered when storing paper files? Why?
- Is any information in veterinary client records *not* confidential? Why, or why not?
- What could be possible consequences of not maintaining confidentiality of veterinary records?

Task Number 134

Explain the inventory process for supplies.

Definition

Explanation should include

- the basic principles and importance of inventory management
- supplies commonly used in a veterinary facility and sources of these supplies
- how to order supplies in accordance with the needs and procedures of the facility, including the concept of standing orders versus as-needed and special orders
- how to store supplies to optimize use of available space, provide ease of access, and conform to environmental considerations.

Process/Skill Questions

- How do inventory usage charts help in determining the need for supplies?
- Why is close tracking of inventory important?
- What is the importance of keeping an order list?
- What are the advantages and disadvantages of standing orders?
- What problems could arise if inventory sheets were not filled out properly?
- How and why are environmental issues important in stock storage?
- How can safety be an issue in storing and handling supplies and equipment?

Task Number 135

Explain equipment maintenance.

Definition

Explanation should include

- equipment commonly found in a veterinary facility and sources for acquiring and maintaining/repairing equipment
- basic techniques to clean and maintain equipment
- the use and importance of warranties and other documents related to equipment.

Process/Skill Questions

- What resources are available to assist the veterinary assistant or technician with equipment maintenance and repair procedures?
 - What should be considered when placing and storing equipment with regard to space, environmental conditions, and access?
 - What basic safety issues are involved in maintaining equipment?
-

Task Number 136

Handle telephone calls and other electronic communications.

Definition

Handling should include

- explaining effective customer service, including dealing with client complaints
- using effective verbal and written communication skills, in accordance with accepted standards
- applying assessment skills needed to determine appropriate responses
- following professional communication etiquette.

Process/Skill Questions

- Why is it important to immediately identify the facility and oneself when making or receiving a phone call?
- What information should always be recorded when taking a phone message?
- Why is it important not to try to perform other office duties while you are talking with a client on the phone?
- Why is it important to take accurate and clear written messages?
- What is the importance of reminder calls? Follow-up calls?
- Why is it important to respond to email messages promptly?
- What information is essential in determining the severity of a situation?
- How can better oral communication skills be developed?

Task Number 137

Schedule an appointment.

Definition

Scheduling an appointment should include

- obtaining essential client information (e.g., name, phone number, email address, purpose of visit)
- assessing the urgency of an emergency situation
- consulting the appointment book or software and recording appointment

- allocating a time period sufficient to care for the animal’s needs
- giving client clear and complete scheduling information and any further information related to the appointment
- repeating the appointment information to the client at the end of the conversation.

Process/Skill Questions

- Why is effective scheduling important to both the veterinary practice and the clients?
- How should emergencies be handled in the scheduling process?
- Why is it important to record the appointment at the time of making it?
- Why is it important to get the client’s phone number and/or email address when making an appointment?
- Why is it important to repeat the appointment information to the client when ending the conversation?

Task Number 138

Explain procedures for handling monetary transactions in the veterinary business.

Definition

Explanation should include

- a breakdown of price for products and services
- method of markup
- showing of mathematical work to determine retail price
- procedures for counting back change.

SOL Correlation by Task

39	Identify the role of supervised agricultural experiences (SAEs) in agricultural education.	English: 11.3, 11.5, 12.3, 12.5
40	Participate in an SAE.	English: 11.5, 11.8, 12.5, 12.8
41	Identify the benefits and responsibilities of FFA membership.	English: 11.5, 11.6, 11.7, 11.8, 12.5, 12.6, 12.7, 12.8
42	Describe leadership characteristics and opportunities as they relate to agriculture and FFA.	English: 11.5, 12.5 History and Social Science: VUS.8, VUS.9, VUS.10, VUS.11, WHII.8, WHII.10, WHII.11
43	Apply for an FFA degree and/or an agricultural proficiency award.	English: 11.5, 12.5
44	Explore career opportunities in animal health care.	English: 11.5, 11.8, 12.5, 12.8 History and Social Science: VUS.13, VUS.14

45	Investigate the different types of work-based learning opportunities.	English: 11.3, 11.5, 11.8, 12.3, 12.5, 12.8
46	Develop a plan for a work-based learning project.	English: 11.5, 12.5 History and Social Science: GOVT.16
47	Conduct a work-based learning project.	English: 11.5, 11.6, 12.5, 12.6
48	Describe the importance of and opportunities for continuing education in the animal care field.	English: 11.5, 11.6, 12.5, 12.6
49	Identify the roles and responsibilities of professionals in the veterinary industry.	
50	Describe the functions of local, state, and national professional organizations in the field of animal care.	English: 11.5, 12.5 History and Social Science: GOVT.8, GOVT.9
51	Define prominent animal special interest groups.	English: 11.3, 11.5, 12.3, 12.5
52	Explain legal and ethical issues in the veterinary medicine field.	English: 11.5, 12.5
53	Describe the physical and mental demands and personal coping mechanisms of various animal-care professionals.	English: 11.3, 11.5, 12.3, 12.5
54	Follow safety procedures for personal protection in the veterinary medical industry.	English: 11.5, 12.5
55	Follow laboratory safety procedures.	English: 11.5, 12.5 Science: BIO.1, CH.1
56	Identify the importance of safety data sheets (SDS).	Science: CH.1
57	Explain the role and regulations of the Occupational Safety and Health Administration (OSHA) and the Virginia Department of Labor pertaining to veterinary science.	English: 11.5, 11.8, 12.5, 12.8 History and Social Science: GOVT.16
58	Identify the physical, chemical, biological, and zoonotic hazards associated with the veterinary industry.	English: 11.5, 12.5 Science: BIO.1, CH.1
59	Describe chemicals, including cleansers, disinfectants, and antiseptics, commonly used in veterinary practice.	English: 11.5, 12.5 Science: BIO.1, CH.1
60	Explain the concept of asepsis in veterinary work.	English: 11.3, 11.5, 12.3, 12.5 Science: BIO.3, BIO.4
61	Explain the origin of each companion animal species.	English: 11.5, 12.5 History and Social Science: WHI.2
62	Identify the colors and other characteristics of breeds within each species.	English: 11.3, 11.5, 11.8, 12.3, 12.5, 12.8
63	Identify breeding methods and rearing techniques of young species.	
64	Describe appropriate housing and maintenance of companion animals.	English: 11.5, 12.5
65	Explain species and/or breed suitability as a companion animal.	English: 11.5, 12.5
66	Describe behavior patterns of companion animals.	English: 11.5, 12.5

67	Interpret companion animal behavior.	
68	Identify unique handling considerations for species/breeds common in the veterinary field.	English: 11.3, 11.5, 12.3, 12.5 Science: BIO.4, BIO.6
69	Identify equipment used for restraining animals.	English: 11.5, 12.5
70	Demonstrate respect for and safe treatment of classroom animals.	English: 11.5, 12.5
71	Demonstrate safe and humane restraint and handling methods used for veterinary procedures.	English: 11.5, 12.5
72	Describe safe and humane transport of an animal.	English: 11.5, 12.5
73	Lift and carry a dog and cat.	English: 11.5, 12.5
74	Move a nonaggressive dog and cat into and out of cage.	English: 11.5, 12.5
75	Identify techniques for handling an aggressive dog and cat.	English: 11.5, 12.5
76	Muzzle a dog and cat.	English: 11.5, 12.5
77	Restrain a dog and cat in lateral recumbency.	English: 11.5, 12.5
78	Describe the use of various types of equipment for restraining a dog and cat.	English: 11.5, 12.5
79	Describe how to move exotic species into and out of cages.	English: 11.5, 12.5
80	Check an animal for fleas.	English: 11.5, 12.5
81	Explain tick removal and prevention.	English: 11.5, 12.5
82	Prepare shampoos and creme rinses.	English: 11.5, 12.5
83	Bathe an animal.	
84	Dry an animal.	
85	Use grooming tools and equipment.	English: 11.5, 12.5
86	Trim an animal's nails.	
87	Brush and/or demat an animal's coat.	
88	Clean an animal's ears.	
89	Clip an animal's coat with electric clippers.	
90	Perform final comb-out.	
91	Explain how to clean, sanitize, disinfect, and store laundry.	English: 11.5, 12.5
92	Clean and disinfect sink/tub.	English: 11.5, 12.5
93	Clean and disinfect small animal quarters.	English: 11.5, 12.5
94	Perform partial water changes and filter changes on aquariums.	English: 11.5, 12.5
95	Sanitize animal treatment area.	English: 11.5, 12.5
96	Clean floors.	English: 11.5, 12.5
97	Change trash liner.	English: 11.5, 12.5
98	Describe the various types of disposal methods within a facility.	English: 11.5, 11.8, 12.5, 12.8
99	Dispose of hazardous materials.	English: 11.5, 11.8, 12.5, 12.8
100	Provide appropriate types of bedding.	English: 11.5, 12.5
101	Explain formation of veterinary medical terminology.	English: 11.3, 11.5, 12.3, 12.5
102	Identify basic veterinary medical terms and abbreviations.	English: 11.3, 11.5, 12.3, 12.5
103	Demonstrate use of veterinary medical terminology.	English: 11.3, 11.5, 12.3, 12.5
104	Describe anatomical and directional terminology.	English: 11.3, 11.5, 12.3, 12.5
105	Describe the relationship among cells, tissues, organs, and organ systems.	English: 11.5, 12.5 Science: BIO.3, BIO.5
106	Explain the anatomy and physiology of the skeletal system.	English: 11.5, 12.5 Science: BIO.4

107	Explain the anatomy and physiology of the muscular system.	English: 11.5, 12.5 Science: BIO.4
108	Explain the anatomy and physiology of the respiratory system.	English: 11.5, 12.5 Science: BIO.4
109	Explain the anatomy and physiology of the digestive system.	English: 11.5, 12.5 Science: BIO.4
110	Explain the anatomy and physiology of the nervous system.	English: 11.5, 12.5 Science: BIO.4
111	Explain the anatomy and physiology of the circulatory system.	English: 11.5, 12.5 Science: BIO.4
112	Explain the anatomy and physiology of the urinary system.	English: 11.5, 12.5 Science: BIO.4
113	Explain the anatomy and physiology of the reproductive system.	English: 11.5, 12.5 Science: BIO.4
114	Explain the anatomy and physiology of the integumentary system.	English: 11.5, 12.5
115	Explore additional body systems.	English: 11.5, 12.5 Science: BIO.4
116	Identify the six basic nutrients and their functions in maintaining animal health.	English: 11.5, 12.5 Science: BIO.2
117	Calculate the maintenance energy requirement (MER) for an animal.	
118	Determine the body condition of an animal.	
119	Determine the nutritional value of animal feeds as they relate to dietary requirements of life stages.	English: 11.5, 12.5
120	Identify marketing strategies of feed companies.	English: 11.2, 11.5, 12.2, 12.5 History and Social Science: GOVT.1, VUS.1
121	Explain the importance of routine physical exams.	English: 11.5, 12.5
122	Identify the characteristics of healthy vs. unhealthy animals.	
123	Describe the method of assessing animal health.	English: 11.5, 12.5
124	Demonstrate the use of diagnostic tools.	English: 11.5, 12.5
125	Weigh and/or measure animal.	
126	Measure and evaluate vital signs.	English: 11.5, 12.5
127	Evaluate mucous membranes and capillary refill time (CRT).	
128	Explain the concept of euthanasia.	English: 11.3, 11.5, 12.3
129	Describe situations that may warrant euthanasia.	English: 11.5, 12.5
130	Describe aspects and accepted procedures and methods of humane euthanasia.	English: 11.5, 11.8, 12.5, 12.8

131	Explain how veterinary personnel can give support and assistance to a grieving client.	English: 11.5, 12.5
132	Describe accepted methods of handling animal remains.	English: 11.5, 12.5
133	Maintain veterinary records.	English: 11.5, 11.7, 12.5, 12.7
134	Explain the inventory process for supplies.	English: 11.5, 12.5
135	Explain equipment maintenance.	
135	Handle telephone calls and other electronic communications.	English: 11.2, 11.5, 11.6, 12.5, 12.6 History and Social Science: GOVT.16
137	Schedule an appointment.	English: 11.2, 11.5, 12.5
138	Explain procedures for handling monetary transactions in the veterinary business.	English: 11.5, 12.5

FFA Information

The National FFA is an organization dedicated to preparing members for leadership and careers in the science, business, and technology of agriculture. Local, state, and national activities and award programs provide opportunities to apply knowledge and skills acquired through agriculture education.

For additional information about the student organization, see the [National FFA website](#) and the [Virginia FFA Association website](#).

The following career development events are available for this course:

- [Agricultural Communications](#)
- [Agronomy](#)
- [Environmental & Natural Resources](#)
- [Farm and Agribusiness Management](#)
- [Floriculture](#)
- [Food Science and Technology](#)
- [Forestry](#)
- [Marketing Plan](#)
- [Nursery/Landscape](#)

Entrepreneurship Infusion Units

Entrepreneurship Infusion Units may be used to help students achieve additional, focused competencies and enhance the validated tasks/competencies related to identifying and starting a new business venture. Because the unit is a complement to certain designated courses and is not mandatory, all tasks/competencies are marked “optional.”

Teacher Resources

- **Virginia Board of Veterinary Medicine:** <https://www.dhp.virginia.gov/vet/>

- **The National Institute for Occupational Safety and Health (NIOSH):** <https://www.cdc.gov/niosh/topics/veterinary/default.html>
- **Merck Veterinary Manual:** <http://www.merckvetmanual.com/>
- **Small Animal Care Safety Contract:** <http://cteresource.org/attachments/anr/veterinary/Animal%20Safety%20Contract.docx>
- **Canine Acute Pain Scale:** <http://cteresource.org/attachments/anr/veterinary/Dog%20Pain%20Scale.pdf>
- **Feline Acute Pain Scale:** <http://cteresource.org/attachments/anr/veterinary/CSU%20Acute%20Pain%20Scale%20Feline.pdf>
- **Equine Comfort Assessment Scale:** <http://cteresource.org/attachments/anr/veterinary/Anesthesia%20Pain%20Management%20Pain%20Score%20Equine.pdf>
- **New Client Form:** <http://cteresource.org/attachments/anr/veterinary/New%20Client%20Form.docx>
- **Pet Release Form:** <http://cteresource.org/attachments/anr/veterinary/Pet%20Release%20Form.docx>

Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- Animal Systems Assessment
- Beef Quality Assurance Examination
- Canine Care and Training Program- Level 1 Certification Examination
- Certified Veterinary Assistant (CVA) Examination (AAH)
- Certified Veterinary Assistant Examination
- College and Work Readiness Assessment (CWRA+)
- Customer Service Specialist (CSS) Examination
- Fundamentals of Animal Science Certification Examination
- Meat Evaluation Certification Examination
- National Career Readiness Certificate Assessment
- Pet Sitters Certification Examination
- Principles of Livestock Selection and Evaluation Certification Examination
- Small Animal Science and Technology Assessment
- Veterinary Medical Applications Examination
- Workplace Readiness Skills for the Commonwealth Examination

Concentration sequences: *A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.*

- Agricultural Business Fundamentals I (8022/36 weeks)
- Agricultural Business Management III (8026/36 weeks)
- Agricultural Business Operations II (8024/36 weeks)
- Biological Applications in Agriculture (8086/36 weeks)
- Biotechnology Applications in Agriculture (8087/36 weeks)
- Biotechnology Foundations in Agricultural and Environmental Science (8085/36 weeks)
- Biotechnology Foundations in Health and Medical Sciences (8344/36 weeks)
- Equine Science (8015/18 weeks)
- Equine Science (8080/36 weeks)
- Equine Science, Advanced (8094/36 weeks)
- Introduction to Animal Systems (8008/36 weeks)
- Livestock Production Management (8012/36 weeks)
- Small Animal Care I (8081/18 weeks)
- Small Animal Care I (8083/36 weeks)
- Small Animal Care II (8084/36 weeks)
- Veterinary Science II (8089/36 weeks, 140 hours)

Career Cluster: Agriculture, Food and Natural Resources	
Pathway	Occupations
Agribusiness Systems	Agricultural Products Sales Representative Farm Products Purchasing Agent and Buyer Farm, Ranch Manager Farmer/Rancher

Career Cluster: Agriculture, Food and Natural Resources	
Pathway	Occupations
	Feed, Farm Supply Store Sales Manager
Animal Systems	Animal Breeder, Husbandry Animal Geneticist Animal Nutritionist Animal Scientist Aquacultural Manager Poultry Manager Veterinarian Veterinary Technician
Environmental Service Systems	Secondary School Teacher
Natural Resources Systems	Fish and Game Officer Fisheries Technician Microbiologist Wildlife Manager

Career Cluster: Health Science	
Pathway	Occupations
Biotechnology Research and Development	Biochemist Cell Biologist Medical, Clinical Laboratory Technician Research Assistant
Diagnostics Services	Medical, Clinical Laboratory Technician Medical, Clinical Laboratory Technologist Phlebotomist Respiratory Therapy Technician
Health Informatics	Epidemiologist Medical Assistant
Support Services	Medical, Clinical Laboratory Technologist
Therapeutic Services	Certified Nurse Aide Emergency Medical Technician, Paramedic Medical Assistant Registered Nurse Respiratory Therapist Respiratory Therapy Technician Surgeon Surgical Technologist Veterinary Assistant Veterinary Technologist

Career Cluster: Science, Technology, Engineering and Mathematics	
Pathway	Occupations
Science and Mathematics	Animal Nutritionist Animal Scientist Biologist Microbiologists Veterinarian Veterinary Assistant