

Course of Study

Veterinary Science Program

Warren County Career Center

**3525 North State Route 48
Lebanon, Ohio 45036**

Adopted 08-17-06

*This document is for the use of the staff at Warren County Career Center.
Credit is given the designer of the template, Upper Valley JVS, Piqua, Ohio.*

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Veterinary Science Warren County Career Center

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Warren County Career Center Administrative Team
Warren County Educational Service Center
Dr. Ellen Warm, Veterinarian, Mason Hospital
Dr. Gabrielle McBride, Veterinarian, Mason Hospital
Dr. Lucinda Craig, Veterinarian, Baker House Animal Hospital
Humane Association
Great Oaks Institute of Technology and Career Development

***Warren County Career Center
Resolution Of School Board Approval***

WHEREAS, representatives of the Veterinarian Science Program of the Warren County Career Center have reviewed the Course of Study; and

WHEREAS, this Course of Study is based upon competencies adopted by the State of Ohio for the Veterinary Science Program; and

WHEREAS, the Veterinarian Science Program has reviewed and added competencies as needed to address local labor market needs and trends in the industry;

NOW, THEREFORE, BE IT RESOLVED, in accordance with the Superintendent's recommendation, that the Warren County Career Center adopt the Veterinary Science Course of Study.

District Superintendent

Date

President, Board of Education

Date

Statement of Recommendation

The Veterinarian Science Program at Warren County Career Center has reviewed this course of study and recommends it for use as the foundation for instruction in the Veterinary Science class.

The developers of this course of study have considered local labor market needs and the school's ability to offer specialized programs. The competencies have been reviewed and accepted as being congruent with our school's vision, mission, and strategic goals. When appropriate, additional competencies related to the program area have been incorporated into this course of study.

Achievement of technical competencies, utilizing proper attitudes, and demonstrating appropriate values are critical for successful employment and for furthering educational opportunities within a student's chosen field. We believe that this course of study adequately and correctly focuses upon student development.

This course of study is recommended on: 08-17-06

Warren County Career Center Vision Statement

WCCC is the valued partner of choice within the educational and economic systems of our communities, by providing quality academic and career technical education.

We pave the way for a future of opportunities unique to each of our learners.

Warren County Career Center Mission Statement

To prepare youths and adults to make informed career choices and to successfully enter, compete, and advance in a changing work world.

Warren County Career Values

- Treating each other with respect, dignity, trust and mutual value
- Communicating openly and honestly
- Taking ownership of personal actions and being held accountable for results
- Upholding and demonstrating high ethical, educational and fiscal standards
- Exhibiting high levels of professionalism
- Providing high quality instruction and highly qualified staff to ensure success for all learners
- Making quality customer service a high priority
- Promoting partnerships and a team environment
- Celebrating team and individual achievements
- Using data to drive planning, decision making and actions

Course Design

Courses are designed to reflect career-focused education, which combines high-level academics with real-life technical skills. The intent is to maximize a student's present and future academic and career success.

Career-focused education enhances the integration of academic and technical skills, designs programs that prepare students with transferable skills and promotes each student's career opportunities.

Course Philosophy

We believe that all aspects of career technical education, including career development, foundation courses, academic courses, career major programs, and support and intervention programs, empower learners to meet the challenges of living, working and succeeding in an ever-changing and diverse global society. Learners gain the knowledge, skills, values and attitudes they need to enter and progress in the world-of-work and to contribute to the well being of their families and society through their participation in:

- Formal classroom activities;
- Lab activities;
- Leadership activities provided by the Career Technical Student Organizations, other organizations, school and community service;
- Opportunities provided in partnership with the affiliated school districts;
- Opportunities provided in partnership with employers; and/or
- Opportunities provided in partnership with postsecondary institutions.

The Veterinary Science Program of the Warren County Career Center is designed to give specific consideration to the needs and career choices of the junior and senior high students by providing orientation to and relevant preparation for becoming proactive persons in the many areas of employment in the Animal Industry.

Such orientation and preparation are directly proportional to the simulated laboratory experiences and expertise as provided by personnel employed by the Warren County Career Center.

Inherent in the Veterinary Science Program are those opportunities for students to emerge as skilled productive persons to enter our global economy with training directly related to the demands of business and industry.

Course Goals

The Career Major Goals for the Veterinary Science Program are to develop competencies in the following areas in order to prepare learners for gainful employment and life long learning in their chosen career field.

General Safety Precautions

- Maintain safe work environment
- Demonstrate safe work habits
- Follow procedures established for the operation and maintenance of equipment

Animal Care Industry

- Analyze animal care industry
- Classify animals
- Identify common animal types

Anatomy and Physiology

- Demonstrate knowledge of anatomical and physiological systems
- Demonstrate knowledge of directional anatomical terms
- Analyze Veterinary Terms

Clinical Examinations

- Examine animals
- Demonstrate knowledge of established procedures for treating injuries
- Demonstrate knowledge of established procedures for providing emergency treatment

Hospital Procedures

- Prepare facilities and equipment for surgery
- Demonstrate knowledge of how to prepare animals for surgery
- Demonstrate knowledge of euthanasia

Pharmacology

- Dispense medicine and supplies (excluding anesthetic and controlled substances)
- Administer medications
- Define basics of pharmacology and safe administration

Principles of Disease

- Apply knowledge of disease transmittal

Parasitology

- Explain the life cycle and clinical signs of parasites

Office Management

- Provide technical assistance
- Conduct sales
- Maintain company image
- Price merchandise

Market products and services
Advertise products and services

Merchandise Handling

Manage receipt of merchandise
Load merchandise and/or animals
Deliver merchandise and/or animals

Business Management

Research suppliers
Perform general office duties
Perform general banking procedures
Maintain client accounts
Control inventory
Order merchandise and animals
Store merchandise
Maintain animal health records (computerized, manual)

Posology

Complete basic math skills that are necessary for veterinary assistants
Complete math skills having to do with measurement and conversion
Calculate dosages

Laboratory Techniques

Demonstrate laboratory procedures
Perform laboratory tests

Animal Nutrition

Select feeds
Feed and water animals

Breeding and Reproduction

Select animals for breeding
Plan breeding system
Breed animals
Care for females
Care of newborns

Grooming

Prepare for grooming animals
Perform maintenance grooming
Bathe animal

Handling

Apply identification to animals
Handle animals
Obedience-train dogs
Restrain animals

Course Description

The Veterinary Science Program of the Warren County Career Center is designed to give specific consideration of the needs and career choices of the junior and senior students by providing orientation to and relevant preparation for becoming proactive persons in the many areas of employment in the Animal Industry.

Such orientation and preparation are directly proportional to the simulated laboratory experiences and expertise as provided by personnel employed by the Warren County Career Center.

Inherent in the Veterinary Science Program are those opportunities for students to emerge as skilled productive persons to enter our global economy with training directly related to the demands of business and industry.

Students will develop the following skill sets in the Veterinary Science Program:

1. Assist practicing veterinarians with treatment procedures.
2. Prepare facilities and equipment for small animal surgery.
3. Administer nutritional and balanced diets for most common types of small domesticated animals.
4. Maintain a sanitary and healthful environment for confined small animals.
5. Practice approved disease and parasite preventive practices.
6. Maintain, analyze and interpret animal health records.
7. Perform laboratory tests on small animals.
8. Demonstrate management practices for the care and management of small animals.
9. Assist with veterinary office and hospital administration

Career Opportunities:

Veterinary Technician
Veterinary Assistant
Veterinary Aide
Kennel Operator
Pet Shop Worker/Owner
Biological Test Laboratory Assistant
Laboratory Animal Care Taker

Skills Gained:

Animal Care Industry
Anatomy and Physiology
Clinical Examinations
Hospital Procedures
Pharmacology
Principles of Disease/Parasitology
Animal Nutrition

Office/Business Management
Breeding and Reproduction
Grooming/Handling

Certifications, College Credit:

Under review

Internships & Job Placement:

Seniors are eligible for early job placement in the second half of the school year. The criteria for placement include instructor recommendation, grade point average and attendance

Typical Class Morning: Arrive at 8:00am. Depart at 10:10am

45 minutes – 1 hour Students will research the topic in the classroom with teacher instruction or assistance.

45 minutes – 1 hour Students will have an opportunity to apply their knowledge and research to real world situations.

10- 40 minutes Students will be able to apply skills learned in the Veterinary Science Program.

Typical Class Afternoon: Arrive at 11:40am. Depart at 1:50pm

45 minutes – 1 hour Students will research the topic in the classroom with teacher instruction or assistance.

45 minutes – 1 hour Students will have an opportunity to apply their knowledge and research to real world situations.

10- 40 minutes Students will be able to apply skills learned in the Veterinary Science Program.

Internships will be available to students at local veterinarian offices, pet stores, kennels, etc...

Academic and Technical Integration

Expectations of curriculum must be aligned with what is written, taught, assessed, and reported. Student expectations focus on active, project-centered learning—an approach to learning that emphasizes a connection between ideas in a discipline and the outside world. Educational programming and course content will clearly connect career and post-secondary opportunities. At the Warren County Career Center, the main goal is to design courses and projects that use strategies for authentic instruction. These characteristics of instruction focus on deep understanding, established opportunities for concept connections, provide anticipatory and abstract thinking, and emphasize genuine application.

The academic courses at the WCCC follow the state model curricula. They are designed to meet both associate school and state requirements. These standards respond to the need to improve student achievement, quality of curriculum and instruction, and strengthen school and community relationships.

Technology

The Warren County Career Center board and staff believe that technology skills are essential for all students to achieve in the 21st century. It is the goal of this district to infuse technology into all facets of education:

- Instruction
- Assessment
- Administration
- Career planning
- Course design
- Professional development

Strategies to incorporate technology into all facets of education are a priority of the district and there is commitment to a continual process to provide updated hardware, software, and professional development for staff members for the purpose of providing a high quality education, with the integration of technology, for all students.

Job Shadowing/Internships/Career Placement

The Warren County Career Center Internship/Placement/Job Shadowing Program involves placing students in meaningful career-based learning experiences to complement their classroom learning. The experiences relate to student interests within their chosen career-technical program and may include job shadowing, group and individual internships, or career placement. This process is coordinated by the Educational Services/Career Pathways Department and supervised by the career-technical instructor.

Job Shadowing is designed to give the student a short-term overview of the many opportunities within a career field. Career-technical instructors confer with students to determine appropriate experiences.

Internships and Job Placement vary somewhat, but during each experience students should accomplish the following goals:

1. Work with mentors, supervisors, co-workers, and others to accomplish assigned tasks that contribute to the long- and short-term goals of the student. All aspects of the internship/placement (including dates, times, responsibilities, evaluations, etc.) will be outlined in an approved Internship Learning Plan that is coordinated by the career-technical instructor.
2. Apply basic skills and knowledge to "real world" business settings and learn new skills that are relevant to the career path.
3. Demonstrate a solid understanding of the basic skills outlined in the Internship Learning Plan.
4. Reflect upon the internship/placement/job shadowing in terms of post-secondary education/career options.

The criterion for participation in career-based learning experiences is included in the approved packet for each activity and may be obtained by the instructor from the Career Pathways office.

The specifics of how these opportunities are offered in this career-technical program or statement of academic support are:

Students that meet the requirements set forth by the Early Placement Committee are eligible to work with local businesses during the second semester of their senior year. This allows the student to work during designated lab time with the approval of the Instructor. The Instructor will monitor academic eligibility along with the status of their field progress using contractor evaluations. In addition, parent approval and a written contract with the student for certain goals to be achieved will be required.

Students Served

The population served by this program is juniors and seniors.

Scope and Sequence

UNIT 1 GENERAL SAFETY PRECAUTIONS

COMPETENCY 1.1 MAINTAIN SAFE WORK ENVIRONMENT (SS EN 1.1)

Competency Builders:

- 1.1.1 Follow written safety information
- 1.1.2 Organize work area
- 1.1.3 Maintain work area in clean and safe condition
- 1.1.4 Identify hazardous materials
- 1.1.5 Interpret material safety data sheets (MSDS)
- 1.1.6 Comply with MSDS
- 1.1.7 Comply with facility and equipment safety rules
- 1.1.8 Ventilate work areas
- 1.1.9 Identify safety hazards
- 1.1.10 Report safety hazards in accordance with established policy
- 1.1.11 Correct safety hazards in accordance with established policy
- 1.1.12 Maintain safety equipment
- 1.1.13 Complete accident reports
- 1.1.14 Identify environmental issues pertaining to the industry, as specified by such sources as the health administration, Environmental Protection Agency (EPA), Food and Drug Administration (FDA), United States Department of Agriculture (USDA) and state and federal regulations, and OSHA
- 1.1.15 Monitor regulation updates
- 1.1.16 Comply with regulation updates
- 1.1.17 Identify medical and chemical controlled product regulations
- 1.1.18 Comply with medical and chemical controlled product regulations
- 1.1.19 Comply with federal, state and local laws

COMPETENCY 1.2 DEMONSTRATE SAFE WORK HABITS (SS EN 1.3)

Competency Builders:

- 1.2.1 Follow label information
- 1.2.2 Wear protective clothing and equipment in accordance with job requirements
- 1.2.3 Verify working condition of personal protective equipment
- 1.2.4 Report defective equipment in accordance with established policy
- 1.2.5 Follow safety procedures established for lifting and carrying objects
- 1.2.6 Interpret information on signs (e.g., written and visual)
- 1.2.7 Observe safety precautions for applying and storing chemicals
- 1.2.8 Follow established procedures for the administration of first aid
- 1.2.9 Follow safety precautions for administering, recording, and storing medications
- 1.2.10 Follow procedures established for personal cleanup after handling chemicals and medications
- 1.2.11 Dispose of chemicals, chemical containers, and medical wastes in accordance with local, state and federal guidelines
- 1.2.12 Secure animal enclosures

**COMPETENCY 1.3 FOLLOW PROCEDURES ESTABLISHED FOR THE
OPERATION AND MAINTENANCE OF EQUIPMENT
(SS EN 2.3)**

Competency Builders:

- 1.3.1 Follow established safety rules and manufacturer's instructions
- 1.3.2 Identify safety zones
- 1.3.3 Comply with safety zones
- 1.3.4 Comply with established guidelines for operating equipment defensively and responsibly
- 1.3.5 Interpret safety symbols
- 1.3.6 Maintain safety shields on equipment
- 1.3.7 Maintain scales and balances
- 1.3.8 Disable power equipment (e.g., turn off, unplug) before performing maintenance
- 1.3.9 Identify potential equipment safety hazards
- 1.3.10 Maintain service records

UNIT 2 ANIMAL CARE INDUSTRY

COMPETENCY 2.1 ANALYZE ANIMAL CARE INDUSTRY (SS BO 2.3)

Competency Builders:

- 2.1.1 Identify career opportunities in the animal care industry
- 2.1.2 Identify the physical requirements for selected jobs
- 2.1.3 Identify the educational requirements for various occupations
- 2.1.4 Identify state licensing requirements for various occupations
- 2.1.5 Identify economic importance of industry
- 2.1.6 Identify the environmental importance of industry
- 2.1.7 Identify employment opportunities in the industry
- 2.1.8 Identify regulatory agencies affecting the industry
- 2.1.9 Identify the importance of continuing education
- 2.1.10 Identify continuing education opportunities
- 2.1.11 Keep up-to-date through participation in continuing education
- 2.1.12 Identify professional organizations publications/media related to the industry
- 2.1.13 Keep up-to-date through participation in professional organizations and conferences
- 2.1.14 Identify animal welfare concerns

COMPETENCY 2.2 CLASSIFY ANIMALS (SS AS 3.1)

Competency Builders:

- 2.2.1 Identify amphibian characteristics
- 2.2.2 Identify avian characteristics
- 2.2.3 Identify mammalian characteristics
- 2.2.4 Identify reptilian characteristics
- 2.2.5 Identify characteristics of bony and cartilaginous fish

COMPETENCY 2.3 IDENTIFY COMMON ANIMAL TYPES (SS AS 3.1)

Competency Builders:

- 2.3.1 Identify amphibian species
- 2.3.2 Identify reptile species
- 2.3.3 Identify dog breeds
- 2.3.4 Categorize dogs by AKC groups
- 2.3.5 Identify cat breeds
- 2.3.6 Identify rabbit breeds
- 2.3.7 Identify guinea pig breeds
- 2.3.8 Identify rodent strains or breeds
- 2.3.9 Identify bird varieties
- 2.3.10 Identify fish varieties
- 2.3.11 Identify domestic animal groups

UNIT 3 ANATOMY AND PHYSIOLOGY

**COMPETENCY 3.1 DEMONSTRATE KNOWLEDGE OF ANATOMICAL AND
PHYSIOLOGICAL SYSTEMS (SS AS 2)**

Competency Builders:

- 3.1.1 Identify circulatory system components
- 3.1.2 Identify digestive system components
- 3.1.3 Identify integumentary system components
- 3.1.4 Identify reproductive system components
- 3.1.5 Identify urinary system components
- 3.1.6 Identify respiratory system components
- 3.1.7 Identify the skeletal system components
- 3.1.8 Identify muscular system components
- 3.1.9 Identify nervous system components
- 3.1.10 Identify endocrine system components
- 3.1.11 Identify external body characteristics
- 3.1.12 Identify lymphatic system components
- 3.1.13 Identify mammary system components

**COMPETENCY 3.2 DEMONSTRATE KNOWLEDGE OF DIRECTIONAL
ANATOMICAL TERMS (SS AS 2)**

Competency Builders:

- 3.2.1 Recognize and implement common directional anatomical terms
- 3.2.2 Apply knowledge of veterinary anatomy through the dissection of animal specimens
- 3.2.3 Identify common intramuscular injection sites
- 3.2.4 Demonstrate common sites for measuring pulses and collecting blood samples
- 3.2.5 Describe how the body seeks to maintain a state of homeostasis

COMPETENCY 3.3 ANALYZE VETERINARY TERMS

Competency Builders:

- 3.3.1 Analyze veterinary terms to define meaning
- 3.3.2 Recognize common Greek and Latin prefixes, suffixes, and roots
- 3.3.3 List abbreviations commonly used in veterinary medicine

UNIT 4 CLINICAL EXAMINATIONS

COMPETENCY 4.1 EXAMINE ANIMALS (SS AS 4.1)

Competency Builders:

- 4.1.1 Identify characteristics of common external parasites
- 4.1.2 Identify characteristics of common skin problems
- 4.1.3 Identify characteristics of common diseases
- 4.1.4 Describe diseases and disorders of all organ systems
- 4.1.5 Explain symptoms of nutritional deficiency
- 4.1.6 Observe and record animal behavior and physiological status
- 4.1.7 Identify collection sites and procedures for collecting blood samples
- 4.1.8 Prepare examination rooms
- 4.1.9 Disinfect examining room equipment
- 4.1.10 Record animal behavior and physiological status
- 4.1.11 Assess animal's disposition before approaching
- 4.1.12 Place animals on examining table
- 4.1.13 Restrain animals on examining table
- 4.1.14 Weigh animals using scales and balances
- 4.1.15 Measure respiration rate
- 4.1.16 Take temperature
- 4.1.17 Take pulse
- 4.1.18 Collect voided stool samples only
- 4.1.19 Collect urine sample using free-catch method
- 4.1.20 Complete examination records

COMPETENCY 4.2 DEMONSTRATE KNOWLEDGE OF ESTABLISHED PROCEDURES FOR TREATING INJURIES (SS AS 4.2)

Competency Builders:

- 4.2.1 Select supplies for treatment

- 4.2.2 Identify procedures for cleansing wounds
- 4.2.3 Identify procedures for applying medications
- 4.2.4 Identify procedures for applying dressings
- 4.2.5 Identify procedures for changing dressings
- 4.2.6 Identify treated animal
- 4.2.7 Access needed information using treatment records
- 4.2.8 Identify housing requirements for treated animals

COMPETENCY 4.3 DEMONSTRATE KNOWLEDGE OF ESTABLISHED PROCEDURES FOR PROVIDING EMERGENCY TREATMENT (SS AS 4.3)

Competency Builders:

- 4.3.1 Identify basic first-aid procedures
- 4.3.2 Identify procedures for transporting emergency victims
- 4.3.3 Administer artificial respiration (simulation)
- 4.3.4 Identify procedures for administering emergency oxygen
- 4.3.5 Identify signs of internal hemorrhaging
- 4.3.6 Identify signs of shock
- 4.3.7 Identify procedures for maintaining body temperature
- 4.3.8 Identify procedures for stopping external bleeding
- 4.3.9 Identify procedures for preparing supplies for transfusion

UNIT 5 HOSPITAL PROCEDURES

COMPETENCY 5.1 PREPARE FACILITIES AND EQUIPMENT FOR SURGERY

Competency Builders:

- 5.1.1 Identifying sterilizing techniques for facilities and equipment
- 5.1.2 Identify surgical equipment
- 5.1.3 Clean surgical equipment
- 5.1.4 Sterilize surgical equipment using autoclave
- 5.1.5 Sterilize surgical equipment using chemicals
- 5.1.6 Identify procedures for laying out surgical equipment
- 5.1.7 Identify procedures for scrubbing for surgery
- 5.1.8 Identify procedures for preparing surgical packs
- 5.1.9 Prepare germicide basins
- 5.1.10 Prepare sterile surgical clothing
- 5.1.11 Identify procedures for preparing postoperative medications
- 5.1.12 Store surgical equipment
- 5.1.13 Clean surgical facility
- 5.1.14 Disinfect surgical facility

COMPETENCY 5.2 DEMONSTRATE KNOWLEDGE OF HOW TO PREPARE ANIMALS FOR SURGERY (SS AS 6.1)

Competency Builders:

- 5.2.1 Confirm animal ID for surgical procedure
- 5.2.2 Confirm pre-op instructions

- 5.2.3 Identify anesthesia methods
- 5.2.4 Identify procedures for removing hair from surgical sites
- 5.2.5 Identify procedures for positioning animals
- 5.2.6 Identify procedures for scrubbing surgical sites
- 5.2.7 Identify procedures for preparing supplies for blood transfusion and/or IVs

**COMPETENCY 5.3 DEMONSTRATE KNOWLEDGE OF EUTHANASIA
(SS AS 5.6)**

Competency Builders:

- 5.3.1 Define euthanasia
- 5.3.2 Identify when euthanasia should be used
- 5.3.3 Identify euthanasia methods for specific species
- 5.3.4 Identify welfare issues
- 5.3.5 Identify body disposal methods

UNIT 6 PHARMACOLOGY

**COMPETENCY 6.1 DISPENSE MEDICINE AND SUPPLIES (EXCLUDING
ANESTHETIC AND CONTROLLED SUBSTANCES)
(SS AS 4.5)**

Competency Builders:

- 6.1.1 Interpret medication terminology symbols
- 6.1.2 Interpret product labels
- 6.1.3 Measure given prescription amounts
- 6.1.4 Transfer products to approved containers
- 6.1.5 Label drug containers
- 6.1.6 Maintain order of storage shelves
- 6.1.7 Store products in accordance with accepted practice
- 6.1.8 Dispose of empty containers and drug-administration devices in accordance with established guidelines and regulations
- 6.1.9 Identify reorder points

COMPETENCY 6.2 ADMINISTER MEDICATIONS (SS AS 4.5)

Competency Builders:

- 6.2.1 Sterilize equipment
- 6.2.2 Identify medication
- 6.2.3 Explain the methods of administering drugs
- 6.2.4 Explain the advantages and disadvantages of each method of administering drugs
- 6.2.5 Locate injection point on animals
- 6.2.6 Select administration devices
- 6.2.7 Fill administrative devices
- 6.2.8 Identify intramuscular injection procedures
- 6.2.9 Identify intravenous injection procedures
- 6.2.10 Identify subcutaneous injection procedures
- 6.2.11 Identify procedures for administering oral medications

- 6.2.12 Identify procedures for administering rectal medications
- 6.2.13 Identify procedures for applying topical medications
- 6.2.14 Identify procedures for applying aural and ophthalmic medications
- 6.2.15 Identify dipping procedures
- 6.2.16 Access needed information using treatment records
- 6.2.17 Record treatments

COMPETENCY 6.3 DEFINE BASICS OF PHARMACOLOGY AND SAFE ADMINISTRATION (SS AS 4.5)

Competency Builders:

- 6.3.1 Define the words pharmacology and drug
- 6.3.2 List and explain the five subject areas that make up pharmacology - Material Medica, Pharmacodynamics, Toxicology, Pharmacy, Therapeutics
- 6.3.3 List the five categories of drugs
- 6.3.4 Explain the methods of administering drugs
- 6.3.5 Explain advantages and disadvantages of each method of administering drugs
- 6.3.6 Explain local and systemic effects of various drugs
- 6.3.7 State reasons for varying or changing the dosage of a drug
- 6.3.8 Name and define specific drugs used in the field
- 6.3.9 State the category in which various drugs are found - Analgesics, Antibiotics, Vasoconstrictors, Local Anti-Infectives, Hemostatics, Germicides, Astringents, Disinfectants, Anesthetics
- 6.3.10 Explain the two types of anesthetics
- 6.3.11 State the three methods of administering a local anesthetic
- 6.3.12 List types of reactions that can occur when a local anesthetic is administered
- 6.3.13 Explain role of vasoconstrictor with a local anesthetic
- 6.3.14 List two methods of administering a general anesthetic
- 6.3.15 List and explain the four stages of a general anesthetic
- 6.3.16 State the dangers of unsafe handling or administering of drugs
- 6.3.17 List factors that must be considered when administering antibiotics
- 6.3.18 List major antibiotics used
- 6.3.19 Explain the importance of an animal's health history chart
- 6.3.20 Explain the purpose of disinfectants
- 6.3.21 Explain the purpose of an autoclave
- 6.3.22 Discuss safety in regard to pharmacology
- 6.3.23 Understand terms of measurement used in pharmacology
- 6.3.24 Use the Merck Veterinary Manual to research drugs, their uses, side effects, and recommended dosages - Plum / Sounders
- 6.3.25 Identify the consequences of drugs and chemical misuse

UNIT 7 PRINCIPLES OF DISEASE

COMPETENCY 7.1 APPLY KNOWLEDGE OF DISEASE TRANSMITTAL (SS AS 4.4)

Competency Builders:

- 7.1.1 Identify common animal diseases

- 7.1.2 Identify zoonotic diseases
- 7.1.3 Organize scheduling and facilities to minimize the possibility of disease transmittal
- 7.1.4 Identify procedures for quarantining animals
- 7.1.5 Identify protective clothing/equipment

UNIT 8 PARASITOLOGY

COMPETENCY 8.1 EXPLAIN THE LIFE CYCLE AND CLINICAL SIGNS OF PARASITES (SS AS 4.2)

Competency Builders:

- 8.1.1 Explain symptoms of external parasites
- 8.1.2 Explain symptoms of internal parasites
- 8.1.3 Identify ectoparasite and endoparasite eggs
- 8.1.4 Identify control methods for various ectoparasites
- 8.1.5 Identify control methods for various endoparasites

UNIT 9 OFFICE MANAGEMENT

COMPETENCY 9.1 PROVIDE TECHNICAL ASSISTANCE (SS BO 5.5)

Competency Builders:

- 9.1.1 Provide client with informative materials
- 9.1.2 Interpret product labels for clients
- 9.1.3 Direct client to read and follow product labels
- 9.1.4 Provide care and safety instructions
- 9.1.5 Demonstrate product use
- 9.1.6 Explain extent of product guarantees
- 9.1.7 Explain extent of live animal guarantees
- 9.1.8 Determine when products are to be delivered
- 9.1.9 Address client complaints and questions

COMPETENCY 9.2 CONDUCT SALES (SS BO 1.10)

Competency Builders:

- 9.2.1 Prospect new clients
- 9.2.2 Greet clients
- 9.2.3 Secure needed information from clients using questioning techniques
- 9.2.4 Interpret client needs
- 9.2.5 Recommend pet care products
- 9.2.6 Develop a production plan
- 9.2.7 Recommend support products
- 9.2.8 Employ established salesperson techniques
- 9.2.9 Employ established telephone sales techniques
- 9.2.10 Process tax-exempt sales transactions

- 9.2.11 Estimate quantities of needed products
- 9.2.12 Estimate total cost of needed products
- 9.2.13 Process credit card sales transactions
- 9.2.14 Calculate client discounts
- 9.2.15 Close sales
- 9.2.16 Complete sales tickets
- 9.2.17 Complete sales slips
- 9.2.18 Compute sales taxes
- 9.2.19 Operate cash register
- 9.2.20 Count change
- 9.2.21 Verify information on checks
- 9.2.22 Process client refunds
- 9.2.23 Thank clients
- 9.2.24 Maintain client records
- 9.2.25 Develop sales goals and incentive programs

COMPETENCY 9.3 MAINTAIN COMPANY IMAGE (SS BO 2.3)

Competency Builders:

- 9.3.1 Identify importance of image
- 9.3.2 Identify factors affecting image
- 9.3.3 Practice telephone etiquette
- 9.3.4 Project professional image (e.g., through dress, speech, grammar, attitude, spelling, communication, interpersonal skills, computer skills including MS Word and Excel, personal hygiene)

COMPETENCY 9.4 PRICE MERCHANDISE (SS BO 1.2)

Competency Builders:

- 9.4.1 Estimate fixed and variable expenses
- 9.4.2 Identify factors affecting prices
- 9.4.3 Calculate break-even points
- 9.4.4 Compare pricing strategies
- 9.4.5 Calculate mark-ups and markdowns
- 9.4.6 Identify psychological effects of pricing
- 9.4.7 Attach price tags
- 9.4.8 Prepare merchandise for inventory or display

COMPETENCY 9.5 MARKET PRODUCTS AND SERVICES (SS BO 1.5)

Competency Builders:

- 9.5.1 Locate market information sources
- 9.5.2 Identify target markets
- 9.5.3 Identify and develop value-added products
- 9.5.4 Identify potential buyers
- 9.5.5 Identify distribution channels
- 9.5.6 Analyze competition
- 9.5.7 Develop marketing goals

- 9.5.8 Determine when to market
- 9.5.9 Notify client when records indicate it's time for routine appointments

COMPETENCY 9.6 ADVERTISE PRODUCTS AND SERVICES (SS BO 1.6)

Competency Builders:

- 9.6.1 Identify products and services to be presented
- 9.6.2 Identify opportunities for publicity
- 9.6.3 Compare types and costs of advertising media
- 9.6.4 Plan presentations
- 9.6.5 Write copy
- 9.6.6 Select photographs for advertisements
- 9.6.7 Select artwork or graphics for advertisements
- 9.6.8 Prepare product demonstrations
- 9.6.9 Prepare product displays
- 9.6.10 Prepare bulletin boards
- 9.6.11 Prepare window displays
- 9.6.12 Prepare counter displays
- 9.6.13 Prepare promotional flyers
- 9.6.14 Arrange retail area according to season

UNIT 10 MERCHANDISE HANDLING

COMPETENCY 10.1 MANAGE RECEIPT OF MERCHANDISE (SS BO 7.1)

Competency Builders:

- 10.1.1 Unload merchandise using safety procedures established for lifting and carrying objects
- 10.1.2 Check for shipping discrepancies
- 10.1.3 Inspect merchandise for damage
- 10.1.4 Unpack materials
- 10.1.5 Group products for display or storage
- 10.1.6 Place merchandise in designated locations
- 10.1.7 Maintain shipping documents (e.g., invoices, packing slips)
- 10.1.8 Report discrepancies and/or damaged merchandise in accordance with standard operating procedures

COMPETENCY 10.2 LOAD MERCHANDISE AND/OR ANIMALS (SS BO 7.1)

Competency Builders:

- 10.2.1 Identify federal, state and local regulations governing the loading of merchandise and animals
- 10.2.2 Obtain required permits
- 10.2.3 Identify factors to consider when selecting shipping companies
- 10.2.4 Assemble shipping containers
- 10.2.5 Prepare container for specific animal or merchandise

- 10.2.6 Prepare shipping labels and care instructions
- 10.2.7 Prepare invoices
- 10.2.8 Complete freight billing forms
- 10.2.9 Capture animals
- 10.2.10 Prepare animals for shipping
- 10.2.11 Load items
- 10.2.12 Maintain environment appropriate for merchandise/handling
- 10.2.13 Secure load
- 10.2.14 Maintain shipping documents

**COMPETENCY 10.3 DELIVER MERCHANDISE AND/OR ANIMALS
(SS BO 7.4)**

Competency Builders:

- 10.3.1 Arrange merchandise/animal delivery
- 10.3.2 Determine delivery routes
- 10.3.3 Secure merchandise/animal (container) in vehicle
- 10.3.4 Maintain environment appropriate for merchandise/handling
- 10.3.5 Unload merchandise
- 10.3.6 Maintain professional image appropriate to business/organization
- 10.3.7 Maintain delivery documents

UNIT 11 BUSINESS MANAGEMENT

COMPETENCY 11.1 RESEARCH SUPPLIERS (SS BO 1.3)

Competency Builders:

- 11.1.1 Identify suppliers for products needed
- 11.1.2 Obtain price lists and catalogs from selected suppliers
- 11.1.3 Compare similar products from different suppliers (e.g., price, quality, volume, service)
- 11.1.4 Determine availability of catalog material
- 11.1.5 Keep product catalogs current

COMPETENCY 11.2 PERFORM GENERAL OFFICE DUTIES (SS BO 6.2)

Competency Builders:

- 11.2.1 Communicate via telephone
- 11.2.2 Process mail
- 11.2.3 Duplicate materials
- 11.2.4 File materials
- 11.2.5 Prepare correspondence
- 11.2.6 Prepare reports
- 11.2.7 Process business documents
- 11.2.8 Schedule appointments
- 11.2.9 Plan work schedules
- 11.2.10 Identify procedures for opening and closing business

- 11.2.11 Perform math functions using a calculator
- 11.2.12 Communicate via two way radio
- 11.2.13 Repair minor office equipment malfunctions
- 11.2.14 Perform basic computer operations (input, process, retrieve data)
- 11.2.15 Transmit messages/documents via fax machine, digital text messaging and email
- 11.2.16 Balance cash drawer
- 11.2.17 Record receipts
- 11.2.18 Process account payments
- 11.2.19 Maintain client records
- 11.2.20 Communicate via electronic communications systems (e.g., Internet, intercoms)
- 11.2.21 Complete forms when admitting and dismissing animals
- 11.2.22 Maintain working environment in accordance with professional standards

**COMPETENCY 11.3 PERFORM GENERAL BANKING PROCEDURES
(SS BO 3.9)**

Competency Builders:

- 11.3.1 Prepare funds for bank deposit
- 11.3.2 Make bank deposits
- 11.3.3 Write checks
- 11.3.4 Endorse checks
- 11.3.5 Maintain banking records

COMPETENCY 11.4 MAINTAIN CLIENT ACCOUNTS (SS BO 2.10)

Competency Builders:

- 11.4.1 Set up client files
- 11.4.2 Verify client information
- 11.4.3 Post receipts
- 11.4.4 Balance client accounts
- 11.4.5 Prepare statements
- 11.4.6 Prepare invoices
- 11.4.7 Check client credit

COMPETENCY 11.5 CONTROL INVENTORY (SS BO 7.1)

Competency Builders:

- 11.5.1 Organize storage areas
- 11.5.2 Conduct physical inventories
- 11.5.3 Identify high and low activity items
- 11.5.4 Calculate costs of carrying inventory
- 11.5.5 Maintain inventory records
- 11.5.6 Identify turnover rate factor
- 11.5.7 Perform logistics management
- 11.5.8 Identify minimum and maximum inventory levels

COMPETENCY 11.6 ORDER MERCHANDISE AND ANIMALS (SS BO 7.1)

Competency Builders:

- 11.6.1 Assess factors affecting ordering (e.g., seasonality, availability)
- 11.6.2 Determine what to order
- 11.6.3 Determine quantity to order
- 11.6.4 Determine when to order
- 11.6.5 Assess needed information using price lists and catalogs
- 11.6.6 Process orders using fax, phone, mail, and e-mail
- 11.6.7 Prepare orders
- 11.6.8 Prepare purchase orders
- 11.6.9 Make maximum use of vendor discounts
- 11.6.10 Calculate shipping charges

COMPETENCY 11.7 STORE MERCHANDISE (SS BO 7.3)

Competency Builders:

- 11.7.1 Follow general safety precautions for the storage of merchandise
- 11.7.2 Stock shelves
- 11.7.3 Face merchandise
- 11.7.4 Front merchandise
- 11.7.5 Clean shelves and merchandise
- 11.7.6 Rotate stock
- 11.7.7 Update prices and Universal Product Codes (UPC)
- 11.7.8 Maintain quality control records
- 11.7.9 Follow approved pest-control procedures

**COMPETENCY 11.8 MAINTAIN ANIMAL HEALTH RECORDS
(COMPUTERIZED, MANUAL) (SS BO 2.10)**

Competency Builders:

- 11.8.1 Code animal health records
- 11.8.2 Purge animal health records
- 11.8.3 Update animal health records
- 11.8.4 Notify clients when records indicate it's time for routine appointments

UNIT 12 POSOLOGY

**COMPETENCY 12.1 COMPLETE BASIC MATH SKILLS THAT ARE
NECESSARY FOR VETERINARY ASSISTANTS**

Competency Builders:

- 12.1.1 Addition/subtraction
- 12.1.2 Multiplication/division
- 12.1.3 Fractions
- 12.1.4 Decimals
- 12.1.5 Percent and averages
- 12.1.6 Compare and order the relative size of common U.S. customary units and metric units

- 12.1.7 Use proportional relationships and formulas to convert units from one measurement system to another

COMPETENCY 12.2 COMPLETE MATH SKILLS HAVING TO DO WITH MEASUREMENT AND CONVERSION

Competency Builders:

- 12.2.1 Calculate linear measurement
12.2.2 Calculate liquid measurement
12.2.3 Complete dimensional analysis to check computations involving measurements
12.2.4 Utilize appropriate levels of precision when calculating with measurements
12.2.5 Take weight
12.2.6 Take temperature

COMPETENCY 12.3 CALCULATE DOSAGES

Competency Builders:

- 12.3.1 Calculate ratio
12.3.2 Explain importance of knowing dose, dosage, and concentration

UNIT 13 LABORATORY TECHNIQUES

COMPETENCY 13.1 LABORATORY PROCEDURES (SS AS 4.3)

Competency Builders:

- 13.1.1 Identify procedures for preparing laboratory samples
13.1.2 Identify procedures for staining blood smears
13.1.3 Identify procedures for obtaining skin scrapings
13.1.4 Identify procedures for obtaining vaginal smears
13.1.5 Identify procedures for performing gram stains
13.1.6 Identify procedures for preparing bacterial cultures
13.1.7 Identify procedures for examining bacterial cultures
13.1.8 Identify procedures for preparing microscope slides
13.1.9 Identify procedures for performing hemoglobin tests
13.1.10 Identify procedures for performing differential blood counts
13.1.11 Identify procedures for testing blood for heartworms using microhematocrit method
13.1.12 Identify procedures for testing heartworms using differentiation method
13.1.13 Identify procedures for performing blood smears
13.1.14 Label containers
13.1.15 Dispose of empty containers in accordance with established regulations
13.1.16 Titrate reactions
13.1.17 Pipette liquids
13.1.18 Access needed information using lab reports and records
13.1.19 Preserve specimens
13.1.20 Label specimens

COMPETENCY 13.2 PERFORM LABORATORY TESTS (SS AS 4.3)

Competency Builders:

- 13.2.1 Analyze fecal samples for internal parasite eggs using direct smear method
- 13.2.2 Analyze fecal samples for internal parasite eggs using standard flotation method
- 13.2.3 Preserve fecal samples
- 13.2.4 Analyze urine sample using dipstick method
- 13.2.5 Identify procedures for blood chemistry test
- 13.2.6 Explain manual methods of performing white blood cell count
- 13.2.7 Explain manual method of performing red blood cell count
- 13.2.8 Explain kit method of performing red blood cell count
- 13.2.9 Utilize diagnostic test kits

UNIT 14 ANIMAL NUTRITION

COMPETENCY 14.1 SELECT FEEDS (SS AS 1.3)

Competency Builders:

- 14.1.1 Identify types of prepared feed products
- 14.1.2 Interpret feed label information
- 14.1.3 Identify feed components and feed quality
- 14.1.4 Identify factors affecting appetite
- 14.1.5 Determine nutritional requirements
- 14.1.6 Analyze nutritional content and quality of feeds
- 14.1.7 Determine type of feed to use
- 14.1.8 Determine feed efficiency based on cost and availability of feeds
- 14.1.9 Determine the amount of feed required
- 14.1.10 Determine how often to feed
- 14.1.11 Determine time to feed

COMPETENCY 14.2 FEED AND WATER ANIMALS (SS AS 3.7)

Competency Builders:

- 14.2.1 Select maintenance diets
- 14.2.2 Select specialty diets and prescription diets
- 14.2.3 Identify current research on birds' need for grit
- 14.2.4 Select growing diets
- 14.2.5 Select feed for orphans
- 14.2.6 Select feed for weaned animals
- 14.2.7 Identify spoiled feed
- 14.2.8 Dispose of spoiled feed
- 14.2.9 Explain factors affecting water quality
- 14.2.10 Monitor water quality and quantity
- 14.2.11 Add medications/supplements to feed and water
- 14.2.12 Prepare feed
- 14.2.13 Hand-feed animals
- 14.2.14 Fill water containers

- 14.2.15 Adjust diet according to palatability
- 14.2.16 Store feed
- 14.2.17 Maintain feeding records
- 14.2.18 Substitute feed ingredients
- 14.2.19 Identify alternate feeding methods

UNIT 15 BREEDING AND REPRODUCTION

COMPETENCY 15.1 SELECT ANIMALS FOR BREEDING (SS AS 5.4)

Competency Builders:

- 15.1.1 Evaluate breeding goals
- 15.1.2 Identify purchase sources
- 15.1.3 Select breeds and varieties
- 15.1.4 Determine age of animals
- 15.1.5 Determine sex of animals
- 15.1.6 Determine soundness of animals
- 15.1.7 Determine temperament of animals
- 15.1.8 Analyze records and pedigrees
- 15.1.9 Select animals for heritable traits
- 15.1.10 Evaluate purchase price

COMPETENCY 15.2 PLAN BREEDING SYSTEM (SS AS 5.5)

Competency Builders:

- 15.2.1 Determine heat cycle
- 15.2.2 Schedule breeding intervals
- 15.2.3 Determine age and weight for breeding
- 15.2.4 Determine male to female ratio
- 15.2.5 Identify basic principles of genetics
- 15.2.6 Measure the genetic characteristics and phenotypes of breeding animals
- 15.2.7 Choose breeding environment appropriate for selected animal

COMPETENCY 15.3 BREED ANIMALS (SS AS 5.5)

Competency Builders:

- 15.3.1 Follow general safety precautions for the breeding of animals
- 15.3.2 Set up breeding environment
- 15.3.3 Identify mammals that are clipped for breeding
- 15.3.4 Clip mammals for breeding
- 15.3.5 Identify principles of and procedures for various mating methods
- 15.3.6 Identify artificial insemination procedures
- 15.3.7 Apply principles and practices of biotechnology to animal reproduction
- 15.3.8 Determine parturition dates
- 15.3.9 Identify general aspects of gestation
- 15.3.10 Identify mammals unable/slow to conceive
- 15.3.11 Schedule pregnancy checks

- 15.3.12 Identify procedures for palpating mammals
- 15.3.13 Access needed information using breeding records
- 15.3.14 Identify aspects of false pregnancy

COMPETENCY 15.4 CARE FOR FEMALES (SS AS 5.8)

Competency Builders:

- 15.4.1 Follow general safety precautions for the care of females
- 15.4.2 Identify signs of approaching parturition
- 15.4.3 Prepare facilities for parturition
- 15.4.4 Prepare females for parturition
- 15.4.5 Identify delivery problems
- 15.4.6 Assist in delivery
- 15.4.7 Identify species in which the mother's placenta and milk flow must be checked
- 15.4.8 Check mothers for expelled placenta
- 15.4.9 Check mothers for milk flow
- 15.4.10 Determine nutritional needs of pregnant and lactating females
- 15.4.11 Identify postpartum complications

COMPETENCY 15.5 CARE OF NEWBORNS (SS AS 5.8)

Competency Builders:

- 15.5.1 Identify environmental standards (e.g., for temperature, light, bedding, separation)
- 15.5.2 Check condition of newborn animals
- 15.5.3 Identify procedures for treating navel cord
- 15.5.4 Assist newborns in nursing
- 15.5.5 Record animal identification
- 15.5.6 Identify preventive health measures
- 15.5.7 Determine alternative procedures for caring for orphans
- 15.5.8 Revive chilled newborns
- 15.5.9 Identify species in which artificial respiration can be administered
- 15.5.10 Identify procedures for administering artificial respiration
- 15.5.11 Complete pedigrees
- 15.5.12 Maintain birth records
- 15.5.13 Maintain growth records

UNIT 16 GROOMING

COMPETENCY 16.1 PREPARE FOR GROOMING ANIMALS (SS AS 6.1)

Competency Builders:

- 16.1.1 Pull client records
- 16.1.2 Identify coat types and conditioners
- 16.1.3 Select tools, equipment, materials and supplies appropriate for grooming task
- 16.1.4 Select handling and restraint procedures appropriate for animal
- 16.1.5 Assess animal's disposition before approaching
- 16.1.6 Follow safety procedures established for lifting and carrying objects

16.1.7 Update client records

COMPETENCY 16.2 PERFORM MAINTENANCE GROOMING (SS AS 6.4)

Competency Builders:

- 16.2.1 Determine maintenance grooming requirements by species
- 16.2.2 Identify possible health problems (e.g., lumps, sores, parasites)
- 16.2.3 Recognize oral and dermal problems
- 16.2.4 Clip nails
- 16.2.5 Grind nails
- 16.2.6 File nails
- 16.2.7 Remove hair from ears
- 16.2.8 Clean ears
- 16.2.9 Trim foot pads
- 16.2.10 Determine brushing and combing techniques appropriate for animal
- 16.2.11 Brush animals
- 16.2.12 Comb animals
- 16.2.13 Remove mats
- 16.2.14 Clip wings
- 16.2.15 Explain recommended beak care

COMPETENCY 16.3 BATHE ANIMAL (SS AS 6.5)

Competency Builders:

- 16.3.1 Select bath products
- 16.3.2 Prepare bath products
- 16.3.3 Apply restraint appropriate for animal
- 16.3.4 Wet animal
- 16.3.5 Identify procedures for draining anal sac
- 16.3.6 Shampoo animals
- 16.3.7 Rinse animals
- 16.3.8 Apply crème rinse, conditioner, flea dip, and/or hot oil treatment
- 16.3.9 Remove excess water
- 16.3.10 Dry animals (e.g., towel, cage, fluff, high velocity drying)
- 16.3.11 Re-brush/re-comb animals

UNIT 17 HANDLING

COMPETENCY 17.1 APPLY IDENTIFICATION TO ANIMALS (SS AS 3.5)

Competency Builders:

- 17.1.1 Leg-band birds
- 17.1.2 Tattoo animals
- 17.1.3 Ear-punch/notch animals
- 17.1.4 Toe-clip rodents
- 17.1.5 Install ear tags, clips
- 17.1.6 Identify procedures for inserting identification computer chip

- 17.1.7 Insert identification computer chip
- 17.1.8 Record identification

COMPETENCY 17.2 HANDLE ANIMALS (SS AS 3.2)

Competency Builders:

- 17.2.1 Comply with safety guidelines for the handling of animals
- 17.2.2 Analyze how personal body language affects handling procedures
- 17.2.3 Identify safety equipment (e.g., muzzle, snares, come-a-long, net, gloves)
- 17.2.4 Identify behavior patterns and characteristics
- 17.2.5 Handle amphibians
- 17.2.6 Handle reptiles
- 17.2.7 Handle dogs
- 17.2.8 Handle rodents
- 17.2.9 Handle cats
- 17.2.10 Handle birds
- 17.2.11 Exercise animals
- 17.2.12 Socialize with animals
- 17.2.13 Separate non-compatible animals
- 17.2.14 Transfer animals between cages

COMPETENCY 17.3 OBEDIENCE TRAIN DOGS (SS AS 3.4)

Competency Builders:

- 17.3.1 Identify philosophies underlying various training approaches
- 17.3.2 Interpret behavior of animals
- 17.3.3 Compare/contrast types of training collars
- 17.3.4 Fit training collars
- 17.3.5 Select leashes
- 17.3.6 Give various corrections (e.g., collar, verbal, scruff, roll-over)
- 17.3.7 Give reward/praise
- 17.3.8 Teach to pay attention
- 17.3.9 Teach to walk without pulling
- 17.3.10 Teach “off”
- 17.3.11 Teach to heel
- 17.3.12 Teach to sit
- 17.3.13 Teach to stand
- 17.3.14 Teach to lie down
- 17.3.15 Teach to stay
- 17.3.16 Teach to come
- 17.3.17 Teach to finish

COMPETENCY 17.4 RESTRAIN ANIMALS (SS AS 3.2)

Competency Builders:

- 17.4.1 Identify various types of devices for restraining or confining animals (e.g., animal carrier, metabolism cage, shoebox cage, pig hurdles, muzzles, squeeze cage)
- 17.4.2 Identify behavior problems

- 17.4.3 Interpret behavior problems
- 17.4.4 Assess animal's disposition before approaching
- 17.4.5 Restrain animals using a snare
- 17.4.6 Apply temporary muzzle
- 17.4.7 Apply muzzles
- 17.4.8 Apply different types of physical restraints/controls
- 17.4.9 Restrain animals using a squeeze cage
- 17.4.10 Identify procedures for using a snake hood and hook
- 17.4.11 Restrain rabbits using a rabbit restrainer
- 17.4.12 Restrain rodents using a rodent restrainer
- 17.4.13 Restrain cats using a cat bag
- 17.4.14 Restrain animal using a net

Technology Standards

Standard 1: Nature of Technology

Students develop an understanding of technology, its characteristics, scope, core concepts* and relationships between technologies and other fields.

Benchmark A: Synthesize information, evaluate and make decisions about technologies.

Benchmark B: Apply technological knowledge in decision-making.

Benchmark C: Examine the synergy between and among technologies and other fields of study when solving technological problems.

Standard 2: Technology and Society Interaction

Students recognize interactions among society, the environment and technology, and understand technology's relationship with history. Consideration of these concepts forms a foundation for engaging in responsible and ethical use of technology.

Benchmark A: Interpret and practice responsible citizenship relative to technology.

Benchmark B: Demonstrate the relationship among people, technology and the environment.

Benchmark C: Interpret and evaluate the influence of technology throughout history, and predict its impact on the future.

Benchmark D: Analyze ethical and legal technology issues and formulate solutions and strategies that foster responsible technology usage.

Benchmark E: Forecast the impact of technological products and systems.

Standard 3: Technology for Productivity Applications

Students learn the operations of technology through the usage of technology and productivity tools.

Benchmark A: Integrate conceptual knowledge of technology systems in determining practical applications for learning and technical problem-solving.

Benchmark B: Identify, select and apply appropriate technology tools and resources to produce creative works and to construct technology-enhanced models.

Standard 4: Technology and Communication Applications

Students use an array of technologies and apply design concepts to communicate with multiple audiences, acquire and disseminate information and enhance learning.

Benchmark A: Apply appropriate communication design principles in published and presented projects.

Benchmark B: Create, publish and present information, utilizing formats appropriate to the content and audience.

Benchmark C: Identify communication needs, select appropriate communication tools and design collaborative interactive projects and activities to communicate with others, incorporating emerging technologies.

Standard 5: Technology and Information Literacy

Students engage in information literacy strategies, use the Internet, technology tools and resources, and apply information-management skills to answer questions and expand knowledge.

Benchmark A: Determine and apply an evaluative process to all information sources chosen for a project.

Benchmark B: Apply a research process model to conduct research and meet information needs.

Benchmark C: Formulate advanced search strategies, demonstrating an understanding of the strengths and limitations of the Internet, and evaluate the quality and appropriate use of Internet resources.

Benchmark D: Evaluate choices of electronic resources and determine their strengths and limitations.

Standard 6: Design

Students apply a number of problem-solving strategies demonstrating the nature of design, the role of engineering and the role of assessment.

Benchmark A: Identify and produce a product or system using a design process, evaluate the final solution and communicate the findings.

Benchmark B: Recognize the role of teamwork in engineering design and of prototyping in the design process.

Benchmark C: Understand and apply research, development and experimentation to problem-solving.

Standard 7: Designed World

Students understand how the physical, informational and bio-related technological systems of the designed world are brought about by the design process. Critical to this will be students' understanding of their role in the designed world: its processes, products, standards, services, history, future, issues and career connections.

Benchmark A: Classify, demonstrate, examine, and appraise energy and power technologies.

Benchmark B: Classify, demonstrate, examine and appraise transportation technologies.

Benchmark C: Classify, demonstrate, examine and appraise manufacturing technologies.

Benchmark D: Classify, demonstrate, examine and appraise construction technologies.

Benchmark E: Classify, demonstrate, examine and appraise information and communication technologies

Benchmark F: Classify, demonstrate, examine and appraise medical technologies.

Benchmark G: Classify, demonstrate, examine and appraise agricultural and related biotechnologies.

Performance Measures/Student Assessment/Instructional Strategies

Assessments/Evaluations

- Observations
- Demonstrations
- Portfolios
- Standardized Tests
- Class Assignment
- Quizzes/Tests/Exams

Instructional Strategies

- Teacher-Directed & Student-Centered Activities
- Case Study Problem Solving
- Cooperative Learning
- Project-Based Learning
- Career-Based Learning (Internships/Shadowing/Placement)
- Community-Based Learning (CTSOs and Other)
- Exploratory Learning
- Independent Research
- Team Teaching

Content Specific Strategies