Tennessee CTE

Small Animal Science Technologies (2022)

History of Domestication 1	**1** History of Small Animal Domestication: Research the history of small animal domestication including defining and applying industry-specific terminology to classify animals in the correct taxonomy. Justify the historical uses and roles of domesticated animals, and compare historical processes of small animal domestication. 1.1
Economic, Occupational, and Technological Implications 2	**1** Economic Implications: Determine the general economic impact of the small animal industry by investigating both home and business implications. 2.1
	2 Career Exploration: Explore and compare local and regional career opportunities in the small animal industry. Describe the knowledge, skills, and abilities necessary for a diverse range of careers in small animal sciences. 2.2
	3 Financial and SAE Recordkeeping: Accurately maintain an active recordkeeping system and apply proper accounting and financial records as they relate to a small animal science supervised agricultural experience (SAE) program or enterprise. Demonstrate the ability to summarize business records such as individual enterprise budgets, profit and loss statements, inventory management, transportation cost, and other specific reports by completing SAE and related financial applications. 2.3
	4 Emerging Technologies: Examine specific emerging technologies that have evolved within the small animal industry (such as, but not limited to, equipment, procedures, and healthcare) and evaluate the economic and societal implications of each. 2.4
Personal and Occupational Health and Safety 3	**1** Diseases: Identify, research, and determine the significance of zoonotic diseases associated with small animals. Compare and contrast findings relating to a specific disease. Justify the use of different methods of infection control in the prevention or management of zoonotic diseases and evaluate the efficacy of existing small animal biosecurity measures. 3.1
	2 Health Requirements and Regulations: Identify and summarize laws and regulations that pertain to small animal health and safety from state and national legislation. Describe health requirements and necessary documentation for small animal transportation and change of ownership. 3.2

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3 **Safety and Operational Procedures: Review common laboratory safety procedures for tool and equipment operation in the small animal science laboratories, including but not limited to accident prevention and control procedures. Demonstrate the ability to follow safety and operational procedures in a lab setting and complete a safety test with 100 percent accuracy.** 3.3

4 **Personal and Animal Safety Practices: Demonstrate the ability to follow procedures precisely, attending to special cases or exceptions noted in appropriate materials, and apply them to the following areas:** 3.4

- a animal restraint and handling, 3.4.A
- b techniques for transportation, 3.4.B
- c appropriate use of chemicals (such as pesticide, fungicide, disinfectants), and 3.4.C
- d differentiate between effective methods for handling small animals and methods proven to be less effective. 3.4.D

Responsible Pet Ownership 4

1 **Financial and Legal Responsibilities: Research the benefits and responsibilities of pet ownership, including factors to consider when choosing a pet. Compare and contrast available sources for obtaining a pet, identifying and summarizing common laws governing pet ownership, and investigating the societal and economic issues that may impact pet owners.** 4.1

2 **Ethical Care: Compare and contast the characteristics of responsible pet ownership with ownership practices that have been shown to be negligent or inappropriate. Explain why certain practices fail and others succeed. Discussion topics may include:** 4.2

- a training and behavior management, 4.2.A
- b housing, boarding, and transporting, 4.2.B
- c breeding, 4.2.C
- d feeding and nurturing, 4.2.D
- e management of health conditions, and 4.2.E
- f matching of animal type/breed and owner lifestyle (including living conditions, geographic location, and number and age of family members). 4.2.F

Animal Ethics 5

1 **Fundaments of Animal Rights and Welfare: Identify the fundamental philosophies related to animal rights and animal welfare. Compare the impact of specific persons, organizations, and legislation related to animal rights and welfare of small animals, citing specific textual evidence.** 5.1

2 **Analyzing Ethical Issues: Debate specific issues related to animal rights and animal welfare by forming claims and counterclaims with specific data and evidence. Issues may include, but are not limited to:** 5.2

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- abuse and/or neglect, 5.2.A
- illegal capture and/or trade, 5.2.B

c overpopulation, 5.2.C

d control of populations, 5.2.D

e euthanasia, 5.2.E

f exhibiting and showing, and 5.2.F

g global issues in small animal ethics and their relation to local problems. 5.2.G

Nutrition and Digestive Systems 6

1 **Digestive System Identification: Differentiate between ruminant and non-ruminant animals, comparing and contrasting their anatomical and physiological differences of small animals.** 6.1

2 **Nutritional Requirements: Research nutrient requirements of small animal diets and organize these into various nutrient groups. Interpret feed labeling and evaluate factors such as life stage and activity level to determine the nutritional needs to recommend balance rations for small animals, justifying recommendations with evidence.** 6.2

3 **Nutritional Diseases: Distinguish among the symptoms of nutritional diseases relevant to small animals and recommend the appropriate control procedures.** 6.3

Genetics, Reproduction, and Genomics 7

1 **Reproductive Systems: Research the major components of male and female reproductive systems in small animals and prepare a short narrative to distinguish the function of reproductive organs, endocrine glands, and hormones. Summarize the physiological changes that occur during reproductive phases, including the estrus cycle, fertilization, gestation, parturition, and lactation.** 7.1

2 **Principles of Genetics and Genomics: Explain how the fundamental principles of genetics and genomics apply to the study of small animals. Principles should include aspects of the concepts of inheritance, gene transfer, lineage tracing of bloodlines, mapping of traits, and mapping of diseases.** 7.2

Fundamental Care and Health of Dogs and Cats 8

1 **Domestication, Care, and Health: Synthesize research on the historical importance of dogs and cats, noting major economic, social, and medical advances impacting domestication. Differentiate between the defining characteristics of the common dog and common cat breeds. Demonstrate conceptual understanding and technical skill in current practices of comprehensive health care and management for the following:** 8.1

a Precisely follow effective grooming procedures and techniques to maintain healthy skin, coat, nails, eyes, and ears. 8.1.A

b Design appropriate facilities based on an assessment of needs. 8.1.B

c Identify appropriate owner/handler responses to behaviors and instincts to ensure the safety of both individual and small animal in a variety of situations. 8.1.C

d Distinguish between clinical signs of proper health and poor health, justifying explanations with data and evidence. 8.1.D

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e Calculate feed rations based on animal characteristics (age, weight, breed, activity level) and nutritional needs. 8.1.E

f Illustrate the reproductive cycle graphically, and summarize available breeding methods and current reproductive technologies. 8.1.F

g Research common diseases and parasites and their effects on the health of dogs and cats, and draw evidence from relevant medical literature to recommend the best prevention or control measures. 8.1.G

Fundamental Care and Health of Rabbits, Guinea Pigs, Chinchillas, and Rodents 9

1 **Domestication, Care, and Health: Synthesize research on the historical importance of rabbits, guinea pigs, chinchillas, and rodents, noting major economic, social, and medical advances impacting domestication. Differentiate between their defining characteristics. Demonstrate conceptual understanding and technical skill in current practices of comprehensive health care and management for the following:** 9.1

a Precisely follow effective grooming procedures and techniques to maintain healthy skin, coat, nails, eyes, and ears. 9.1.A

b Design appropriate facilities based on an assessment of needs. 9.1.B

c Identify appropriate owner/handler responses to behaviors and instincts to ensure the safety of both individual and small animal in a variety of situations. 9.1.C

d Distinguish between clinical signs of proper health and poor health, justifying explanations with data and evidence. 9.1.D

e Calculate feed rations based on animal characteristics (age, weight, breed, activity level) and nutritional needs. 9.1.E

f Illustrate the reproductive cycle graphically, and summarize available breeding methods and current reproductive technologies. 9.1.F

g Research common diseases and parasites and their effects on the health of rabbits, guinea pigs, chinchillas, and rodents, and draw evidence from the most recent medical literature to recommend the best prevention or control measures. 9.1.G

Fundamental Care and Health of Avians, Fish, Amphibians, and Reptiles 10

1 **Domestication, Care, and Health: Synthesize research on the historical importance of avians, fish, amphibians, and reptiles, noting major economic, social, and medical advances impacting domestication. Differentiate between their defining characteristics. Demonstrate conceptual understanding and technical skill in current practices of comprehensive health care and management for the following:** 10.1

a Precisely follow effective grooming procedures and techniques for applicable species. 10.1.A

b Design appropriate facilities based on an assessment of needs. 10.1.B

c Identify appropriate owner/handler responses to behaviors and instincts to ensure the safety of both individual and small animal in a variety of situations. 10.1.C

d Distinguish between clinical signs of proper health and poor health, justifying explanations with data and evidence. 10.1.D

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e Calculate feed rations based on animal characteristics (age, weight, breed, activity level) and nutritional needs. 10.1.E

f Illustrate the reproductive cycle graphically, and summarize available breeding methods and current reproductive technologies. 10.1.F

g Research common diseases and parasites and their effects on the health of birds, fish, amphibians, and reptiles, and draw evidence from the most recent medical literature to recommend the best prevention or control measures. 10.1.G