



## CTSO Course Alignments: Small Animal Science

Below you will find standards for the Small Animal Science course aligned with competitive events from appropriate career and technical student organizations (CTSOs). Knowing the aligned events for your organization will allow you to have additional tools for teaching course standards, as well as increase student engagement and preparation in your CTSO activities. The final column recommends potential tools from other CTSO organizations. Even if your students are not participating in these organizations, available rubrics, tools, and materials can also add to the instructional resources at your disposal for best teaching your content.

**Important to note:** While the aligned activities below can be important tools in teaching course standards, it is important to note that events may not cover a standard in its entirety and should not be the sole instructional strategy used to address a standard.

	STANDARD	ALIGNED FFA COMPETITIVE EVENTS/PROGRAMS	OTHER POTENTIAL CTSO TOOLS & RESOURCES
1	Synthesize research on the history of small animal domestication to produce an informative essay, 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. (TN Reading 1, 2, 4; TN Writing 2, 4, 9)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Veterinary Science</li> </ul>
2	Review common laboratory safety procedures for tool and equipment operation in the agricultural and biosystems engineering 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. (TN Reading 3; ARNR CS)		<ul style="list-style-type: none"> <li>• <b>TSA:</b> Biotechnology Design</li> <li>• <b>HOSA:</b> Biomedical Laboratory Science</li> <li>• <b>SkillsUSA:</b> Occupational Health and Safety</li> </ul>
3	Explore and compare local and regional career opportunities in the small animal industry. Describe in a written or visual representation the knowledge, skills, and abilities necessary for a diverse range of careers in small animal sciences, citing specific textual evidence from local job postings and Tennessee labor data. (TN Reading 1; TN Writing 2, 9)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Job Interview</li> </ul>	<ul style="list-style-type: none"> <li>• <b>FCCLA:</b> Job Interview, Career Investigation, Entrepreneurship</li> <li>• <b>HOSA:</b> Job Seeking Skills, Veterinary Science</li> <li>• <b>SkillsUSA:</b> Job Interview, Entrepreneurship, Employment Application Process</li> <li>• <b>TSA:</b> Career Preparation</li> </ul>
4	Examine specific 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. (TN Reading 1, 2, 4)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Veterinary Science</li> <li>• <b>TSA:</b> Biotechnology Design</li> </ul>

5	Identify, research, and determine the significance of zoonotic diseases associated with small animals. Compare and contrast findings from multiple sources relating to a specific disease (including student’s own experience, laboratory experiment, case studies, and scholarly journals). Justify the use of different methods of infection control in the prevention or management of a zoonotic disease and evaluate the efficacy of existing small animal biosecurity measures. (TN Reading 1, 5, 9)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Prepared Speaking, Researched Persuasive Speaking, Veterinary Science</li> <li>• <b>TSA:</b> Prepared Presentation</li> </ul>
6	Correctly identify and summarize laws and regulations that pertain to small animal health and safety in an explanatory text, citing specific textual evidence from state and national legislation. Describe health requirements and necessary documentation for small animal transportation and change of ownership. (TN Reading 1, 9; TN Writing 2, 4)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>SkillsUSA:</b> Occupational Health and Safety</li> </ul>
7	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. (TN Reading 3)		
8	Demonstrate in a live setting or in a presentation the ability to follow procedures precisely, attending to special cases or exceptions noted in appropriate materials, and apply them to the following areas: a. Animal restraint and handling b. Techniques for transportation c. Appropriate use of chemicals (such as pesticide, fungicide, disinfectants) Differentiate between effective methods for handling small animals and methods proven to be less effective. (TN Reading 3)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Veterinary Science</li> </ul>
9	Research and prepare informational resources for potential pet owners (such as fact sheets, brochures, posters, or presentations) that present the benefits and responsibilities of pet ownership, including listing important factors to consider when choosing a pet, comparing and contrasting 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. (TN Reading 1, 7, 9; TN Writing 4, 6, 8, 9)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Agricultural Communications</li> </ul>	<ul style="list-style-type: none"> <li>• <b>FCCLA:</b> Interpersonal Communications</li> <li>• <b>HOSA:</b> Prepared Speaking, Researched Persuasive Speaking</li> <li>• <b>TSA:</b> Desktop Publishing, Children’s Stories, Prepared Presentation</li> </ul>

10	<p>Drawing from multiple sources on small animal management practices, craft an argumentative essay that contrasts the characteristics of responsible pet ownership with ownership practices that have been shown to be negligent or inappropriate. Using supporting evidence from the research to develop claim(s) and counterclaim(s), argue why certain practices fail and others succeed. Topics may include:</p> <ol style="list-style-type: none"> <li>Training and behavior management</li> <li>Housing, boarding, and transporting</li> <li>Breeding</li> <li>Feeding and nurturing</li> <li>Management of health conditions</li> <li>Matching of animal type/breed and owner lifestyle (including living conditions, geographic location, and number and age of family members)</li> </ol> <p>(TN Reading 1, 9; TN Writing 1, 4, 8, 9)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Biomedical Debate, Researched Persuasive Speaking</li> <li>• <b>TSA:</b> Debating Technological Issues</li> </ul>
11	<p>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. (TN Reading 1, 9; TN Writing 9)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Agricultural Issues</li> </ul>	<ul style="list-style-type: none"> <li>• <b>FCCLA:</b> Advocacy</li> </ul>
12	<p>Investigate current small animal issues by analyzing an author’s purpose and assessing the extent to which the reasoning and evidence in a specific text support the author’s claim. Debate specific issues by forming and supporting claims and counterclaims with specific data and evidence. Issues related to animal rights and animal welfare may include, but are not limited to:</p> <ol style="list-style-type: none"> <li>Abuse and/or neglect</li> <li>Illegal capture and/or trade</li> <li>Overpopulation</li> <li>Control of populations</li> <li>Euthanasia</li> <li>Exhibiting and showing</li> <li>Global issues in small animal ethics and their relation to local problems.</li> </ol> <p>(TN Reading 6, 7, 8, TN Writing 1, 9)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Agricultural Issues</li> </ul>	<ul style="list-style-type: none"> <li>• <b>FCCLA:</b> Advocacy</li> <li>• <b>HOSA:</b> Biomedical Debate</li> <li>• <b>TSA:</b> Debating Technological Issues</li> <li><b>HOSA:</b> Biomedical Debate</li> </ul>
13	<p>Create a visual representation to differentiate between ruminant and non-ruminant animals, comparing and contrasting their anatomical and physiological differences. (TN Reading 7, TN A&amp;P 5)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Extemporaneous Health Poster, Veterinary Science</li> <li>• <b>TSA:</b> Desktop Publishing, Promotional Graphics</li> </ul>
14	<p>Using information from scholarly journals or Tennessee Extension Service, research nutrient requirements of the diets of small animals 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 and then recommend balance rations for small animals, justifying recommendations with evidence from the text. (TN Reading 1, 7; TN Writing 2, 4; TN A&amp;P 6)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Researched Persuasive Speaking, Veterinary Science</li> <li>• <b>TSA:</b> Essays on Technology</li> </ul>

15	Distinguish among the symptoms of nutritional diseases relevant to small animals and recommend the appropriate control procedures, expressed in writing. (TN Reading 7, 9; TN Writing 2)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Veterinary Science</li> </ul>
16	Research and develop illustrative models of 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. Produce an explanatory essay summarizing the physiological changes that occur during reproductive phases, including the estrus cycle, fertilization, gestation, parturition and lactation. (TN Reading 7; TN Writing 2, 4; TN A&P 6)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Extemporaneous Health Poster, Veterinary Science</li> <li>• <b>TSA:</b> Desktop Publishing, , Promotional Graphics</li> </ul>
17	Using graphic representations and descriptive text, explain how the fundamental principles of genetics, such as but not limited to concepts of inheritance and gene transfer, apply to the study of small animals. (TN Biology I 4, TN Biology II 4)	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Prepared Speaking, Veterinary Science</li> <li>• <b>TSA:</b> Prepared Presentation</li> </ul>
18	<p>Synthesize research on the historical importance of dogs and cats, noting major economic, social, and medical advances impacting domestication. Produce an informational essay or model (such as a timeline, graphical illustration, or presentation) that differentiates between the defining characteristics of common dog and common cat breeds. Demonstrate conceptual understanding and technical skill in current practices of comprehensive health care and management for the following:</p> <ol style="list-style-type: none"> <li>Precisely follow effective grooming procedures and techniques to maintain healthy skin, coat, nails, eyes, and ears</li> <li>Design appropriate facilities based on assessment of needs and present plans in a visual format</li> <li>Identify appropriate owner/handler responses to behaviors and instincts to ensure safety of both individual and small animal in a variety of situations</li> <li>Distinguish between clinical signs of proper health and poor health, justifying explanations with data and evidence</li> <li>Using quantitative reasoning and appropriate units, calculate rations based on animal characteristics (age, weight, breed, activity level) and nutritional needs</li> <li>Illustrate the reproductive cycle graphically, and summarize available breeding methods and current reproductive technologies</li> <li>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.</li> </ol> <p>(TN Reading 1, 2, 3, 7, 8, 9; TN Writing 2, 7, 8, 9; TN Math N-Q)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Researched Persuasive Speaking, Veterinary Science</li> <li>• <b>TSA:</b> Essays on Technology</li> </ul>

<p><b>19</b></p>	<p>Synthesize research on the historical importance of rabbits, guinea pigs, chinchillas, and rodents, noting major economic, social, and medical advances impacting domestication. Produce an informational essay or model (such as a timeline, graphical illustration, or presentation) that differentiates between their defining characteristics. Demonstrate conceptual understanding and technical skill in current practices of comprehensive health care and management for the following:</p> <ol style="list-style-type: none"> <li>Precisely follow effective grooming procedures and techniques to maintain healthy skin, coat, nails, eyes, and ears</li> <li>Design appropriate facilities based on assessment of needs and present plans in a visual format</li> <li>Identify appropriate owner/handler responses to behaviors and instincts to ensure safety of both individual and small animal in a variety of situations</li> <li>Distinguish between clinical signs of proper health and poor health, justifying explanations with data and evidence</li> <li>Using quantitative reasoning and appropriate units, calculate rations based on animal characteristics (age, weight, breed, activity level) and nutritional needs</li> <li>Illustrate the reproductive cycle graphically, and summarize available breeding methods and current reproductive technologies</li> <li>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.</li> </ol> <p>(TN Reading 1, 2, 3, 7, 8, 9; TN Writing 2, 7, 8, 9; TN Math N-Q)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Researched Persuasive Speaking, Veterinary Science</li> <li>• <b>TSA:</b> Essays on Technology</li> </ul>
<p><b>20</b></p>	<p>Synthesize research on the historical importance of avians, fish, amphibians, and reptiles, noting major economic, social, and medical advances impacting domestication. Produce an informational essay or model (such as a timeline, graphical illustration, or presentation) that differentiates between their defining characteristics. Demonstrate conceptual understanding and technical skill in current practices of comprehensive health care and management for the following:</p> <ol style="list-style-type: none"> <li>Precisely follow effective grooming procedures and techniques for applicable species</li> <li>Design appropriate facilities based on assessment of needs and present plans in a visual format</li> <li>Identify appropriate owner/handler responses to behaviors and instincts to ensure safety of both individual and small animal in a variety of situations</li> <li>Distinguish between clinical signs of proper health and poor health, justifying explanations with data and evidence</li> <li>Using quantitative reasoning and appropriate units, calculate rations based on animal characteristics (age, weight, breed, activity level) and nutritional needs.</li> <li>Illustrate the reproductive cycle graphically, and summarize available breeding methods and current reproductive technologies</li> <li>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.</li> </ol> <p>(TN Reading 1, 2, 3, 7, 8, 9; TN Writing 2, 7, 8, 9; TN Math N-Q)</p>	<ul style="list-style-type: none"> <li>• <b>FFA:</b> Veterinary Science</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HOSA:</b> Researched Persuasive Speaking, Veterinary Science</li> <li>• <b>TSA:</b> Essays on Technology</li> </ul>

<b>ALL</b>	<b>CAN BE USED WITH ALL/MOST STANDARDS</b>	<ul style="list-style-type: none"><li>• <b>FFA:</b> Agriscience Fair, Veterinary Science</li></ul>	<ul style="list-style-type: none"><li>• <b>FCCLA:</b> Illustrated Talk, Chapter in Review Display, Chapter in Review Portfolio</li><li>• <b>HOSA:</b> Veterinary Science</li><li>• <b>SkillsUSA:</b> Career Pathways Showcase, Job Skills Demonstration A, Job Skills Demonstration O, Prepared Speech, Extemporaneous Speaking, Chapter Display</li></ul>
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