

Small Animal Care

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**Arkansas Department of Career Education
Model Framework**

Course Title: **Small Animal Care**

Career Cluster: **Agriculture, Food & Natural Resources**

Secondary – Agriculture Science and Technology	
Course Number	491450
CIP Number	01.05
Grade Level	11-12
Course Type	Elective
Teacher Certification	010 Agriculture 218 Agricultural Sciences & Technology
CTSO	FFA
Facility Requirements	http://arkansasfacilities.arkansas.gov/SchoolFacManual.aspx
Prerequisite Courses	Animal Science I & Animal Science II
Industry Certifications	

2013 – 2014

**Arkansas Department of Career Education
Student Performance Standards**

Course Title: Small Animal Care

Course Number: 491450

Course Credit: .5

Program Purpose/Structure

This course allows for a look into the Small Animal Care Industry while providing Hands on Laboratories, and opportunities to participate in FFA and Supervised Agriculture Experiences.

Course Description:

This course is designed to provide students with skills and concepts involved with the care and management of companion animals.

At the conclusion of this course, students will be able to:

Standard 1.0 Analyze the History and Economy of the Small Animal Industry

- 1.1 Investigate the history and use of domesticated animals.
- 1.2 Assess the economic impact of the small animal industry.

Standard 2.0 Investigate Small Animal Safety Issues

- 2.1 Evaluate the impact of health issues on the small animal industry
- 2.2 Demonstrate safe handling procedures for small animals

Standard 3.0 Evaluate the Considerations of Responsible Pet Ownership

- 3.1 Analyze factors to consider in pet selection
- 3.2 Assess readiness for pet ownership

Standard 4.0 Develop Skills Necessary to Provide Care and Maintenance Dogs

- 4.1 Connect the history of dogs to popular modern breeds
- 4.2 Assess the anatomy and physiology of the dog
- 4.3 Assess the health and maintenance requirements of dogs
- 4.4 Assess grooming and training needs of dogs

Standard 5.0 Develop Skills Necessary to Provide Care and Maintenance of Cats

- 5.1 Connect the history of the cat to the modern feline
- 5.2 Assess the anatomy and physiology of the cat
- 5.3 Assess the health and maintenance requirements of cats
- 5.4 Assess grooming and raining needs of cats

Standard 6.0 Develop Skills Necessary to Provide Care and Maintenance of Rabbits

- 6.1 Investigate the history of the rabbit
- 6.2 Assess the anatomy and physiology of the rabbit
- 6.3 Assess the health and maintenance requirements of rabbits
- 6.4 Investigate the grooming and housing needs of rabbits

Standard 7.0 Develop Skills Necessary to Provide Care and Maintenance for Common Rodents (Gerbils, Guinea Pigs, and Hamsters)

- 7.1 Assess the history of domesticating gerbils, guinea pigs, and hamsters
- 7.2 Analyze the characteristics of gerbils, guinea pigs, and hamsters
- 7.3 Assess the health and care needs of rodents
- 7.4 Handling of Gerbils, Guinea Pigs, and Hamsters

Standard 8.0 Develop Skills Necessary to Provide Care and Maintenance for Common Exotic Pets

- 8.1 Analyze and classify small exotic pets
- 8.2 Assess the health and care needs of exotic pets
- 8.3 Assess techniques for and concerns of handling exotic animals
- 8.4 Evaluate the housing and equipment needs of exotic animals

Standard 1.0 Analyze the History and Economy of the Small Animal Industry			
Performance Indicator 1.1 Investigate the history and use of domesticated animals.	Recommended Application/Activity	CCSS Standards	CCTC Standards
1.1.1 Summarize the history of domesticated companion animals.	<ul style="list-style-type: none"> • Create a timeline illustrating the history of these domesticated animals: <ul style="list-style-type: none"> ○ Dogs ○ Cats ○ Rabbits 	SL11-12.2	AG-ANI1 CRP6
1.1.2. Assess the human need for companion animals.	<ul style="list-style-type: none"> • Research the theories for the domestication of animals. 	SL11-12.1 SL11-12.1d	AG-ANI1 CRP8
1.1.3. Investigate different uses of companion animal breeds.	<ul style="list-style-type: none"> • Survey group of peers to compare the various uses for domestic animals. 	SL11-12.1c	AG-ANI2 CRP5
Performance Indicator 1.2 Assess the economic impact of the small animal industry	Recommended Application/Activity	CCSS Standards	CCTC Standards
1.2.1 Analyze the financial impact of the small animal industry on a local and national economy	<ul style="list-style-type: none"> • Interview local pet retail store manager for the amount of annual sales for pet products. 	R11-12.6	AG-ANI4 CRP4
1.2.2 Compare local career opportunities in small animal care with those available regionally or nationally.	<ul style="list-style-type: none"> • Collect information about and display various careers in the small animal industry. 	SL11-12.4	AG-ANI4 CRP6

1.2.3 Connect careers in the small animal industry with extended learning opportunities available in FFA.	<ul style="list-style-type: none"> Apply concepts from the small animal industry to Supervised Agriculture Experience and Career Development Events 	SL11-12.2	AG-ANI7 CRP10
Standard 2.0 Investigate Small Animal Safety Issues			
Performance Indicator 2.1 Evaluate the impact of health issues on the small animal industry.	Recommended Application/Activity	CCSS Standards	CCTC Standards
2.1.1 Investigate zoonotic diseases common in companion animals.	<ul style="list-style-type: none"> Research common zoonotic diseases. Create a presentation discussing the characteristic of each zoonotic disease listed: <ul style="list-style-type: none"> Toxoplasmosis Rabies Ringworm Salmonella Streptococcus 	SL11-12.2 SL11-12.4	AG-ANI5 CRP4
2.1.2 Assess common parasites in companion animals.	<ul style="list-style-type: none"> Design a model of the life cycle for common parasites listed: <ul style="list-style-type: none"> Fleas Ticks Mites Roundworm Tapeworm Hookworm Pinworm Look for signs of parasites in a given set of pictures/slides. 	W11-12.2a	AG-ANI5 CRP2
2.1.3 Create a list of safety precautions to prevent disease transmission.	<ul style="list-style-type: none"> Develop a pamphlet to illustrate the proper safety precautions for disease prevention. <ul style="list-style-type: none"> Vaccination Deworming Proper sanitation procedures 	W11-12.6	AG-ANI5 CRP11

Performance Indicator 2.2 Demonstrate safe handling procedures for small animals	Recommended Application/Activity	CCSS Standards	CCTC Standards
2.2.1 Evaluate methods for restraining animals for the safety of the handler and the animal.	<ul style="list-style-type: none"> • Demonstrate scenarios in which restraint is needed (bathing, grooming, travelling) 	R11-12.3	AG-ANI2 CRP2
2.2.2 Assess the effectiveness of tools commonly used for safely handling and restraining small animals.	<ul style="list-style-type: none"> • Demonstrate the proper use of various restraints <ul style="list-style-type: none"> ○ Collar ○ Leash ○ Muzzle 	R11-12.3	AG-ANI2 AG-ANI7 CRP2
Standard 3.0 Evaluate the Considerations of Responsible Pet Ownership			
Performance Indicator 3.1 Analyze factors to consider in pet selection	Recommended Application/Activity	CCSS Standards	CCTC Standards
3.1.1 Assess factors to consider when choosing a household pet.	<ul style="list-style-type: none"> • Using factors listed, prove which pet is best for your household. (or) • Using factors listed, critique the choice of pet you currently own: <ul style="list-style-type: none"> ○ Lifestyle ○ Space requirement ○ Cost ○ Use ○ Health concerns 	SL11-12.1 SL11-12.1a	AG-ANI3 CRP8
3.1.2 Compare different options for obtaining a pet.	<ul style="list-style-type: none"> • Visit/interview local shelters, breeders, pet shops to discuss availability of pets and qualifications of the owner: <ul style="list-style-type: none"> ○ Breeders ○ Shelters ○ Pet Shops ○ Private treaty 	SL11-12.1c	AG-ANI2 CRP4

Performance Indicator 3.2 Assess readiness for pet ownership	Recommended Application/Activity	CCSS Standards	CCTC Standards
3.2.1 Evaluate basic needs for the well-being of a small companion animal.	<ul style="list-style-type: none"> Virtual shopping trip for their dream pet (petsmart.com, petco.com,etc.). 	SL11-12.2	AG-ANI2 CRP11
3.2.2 Investigate the need for castration, spay and neuter programs.	<ul style="list-style-type: none"> Investigate the pros and cons of spay and neuter programs. 	SL11-12.1 SL11-12.1a	AG-ANI2 CRP2
3.2.3 Debate the need for euthanasia in pet care.	<ul style="list-style-type: none"> Develop a logical argument for and against euthanasia. 	SL11-12.1b	AG-ANI2 CRP9
Standard 4.0 Develop Skills Necessary to Provide Care and Maintenance for Dogs			
Performance Indicator 4.1 Connect the history of dogs to popular modern breeds	Recommended Application/Activity	CCSS Standards	CCTC Standards
4.1.1 Analyze the ancestry of the dog.	<ul style="list-style-type: none"> Watch “Mankind the Story of All of Us: Domesticating the Dog” by History Channel (YouTube) 	SL11-12.2	AG-ANI1 CRP5
4.1.2 Evaluate how different breeds of dogs were developed.	<ul style="list-style-type: none"> Create visual presentation outlining the development and characteristics of a dog breed 	SL11-12.4	AG-ANI1 CRP12
4.1.3 Compare and contrast the different classes of dogs.	<ul style="list-style-type: none"> Design and conduct a school wide survey to determine the various classes of dogs represented in the community, and chart data to present findings. 	SL11-12.1b SL11-12.3 SL11-12.4	AG-ANI1 CRP6
Performance Indicator 4.2 Assess the anatomy and physiology of the dog	Recommended Application/Activity	CCSS Standards	CCTC Standards
4.2.1 Analyze the exterior anatomy of the dog.	<ul style="list-style-type: none"> Label the exterior anatomy of the dog. 	L11-12.4b L11-12.4d	AG-ANI4 CRP2
4.2.2 Analyze the parts of the digestive system.	<ul style="list-style-type: none"> Label the various parts of the digestive system. Illustrate, label and describe the function of each part of the digestive system 	L11-12.4b L11-12.4d	AG-ANI3 CRP2

4.2.3 Analyze the male and female reproductive system.	<ul style="list-style-type: none"> Label the parts of both the male and female the reproductive systems. 	L11-12.4b L11-12.4d	AG-ANI4 CRP2
Performance Indicator 4.3 Assess the health and maintenance requirements of dogs	Recommended Application/Activity	CCSS Standards	CCTC Standards
4.3.1 Compare the nutritional needs of dogs at different ages/stages.	<ul style="list-style-type: none"> Design a feeding schedule for each stage of a dog's life Design a graphic representation of nutritional requirements of a: <ul style="list-style-type: none"> Puppy Adult Gestating/lactating female Senior 	R11-12.3	AG-ANI3 CRP2
4.3.2 Evaluate the reproductive and genetic management of dogs.	<ul style="list-style-type: none"> Create a breeding calendar for dogs. Design a parturition crate/pen for a dog. Create a Punnett Square to predict the outcome of a cross-breeding scenario 	L11-12.4c	AG-ANI4 CRP11
4.3.3 Research common canine diseases.	<ul style="list-style-type: none"> Present a speech on a common disease found in dogs, choosing from: <ul style="list-style-type: none"> Distemper Canine Parvo virus Kennel Cough Leptospirosis Canine Brucellosis Adenovirus Hepatitis Parainfluenza Hip Dysplasia Arthritis Heart Disease Anal Sacs Create presentation describing signs, symptoms, and treatments for common diseases in dogs Look at slides through a microscope of the infection/diseased tissue and blood. 	L11-12.6 R11-12.3	AG-ANI5 CRP4

4.3.4 Investigate parasites common in dogs.	<ul style="list-style-type: none"> • Look at fecal samples under a microscope for signs of infections. • Examine a dog for signs of parasites. • Create presentation describing signs, symptoms, and treatments for common parasites in dogs: <ul style="list-style-type: none"> ○ Heartworms ○ Ear Mite ○ Sarcoptic Mite ○ Demdectic Mite ○ Dog Flea ○ Cat Flea ○ Brown Dog Tick ○ American Dog Tick 	L11-12.6 R11-12.3	AG-ANI5 CRP4
4.3.5 Compare the exercise needs of various dog breeds.	<ul style="list-style-type: none"> • Research exercise needs for various dog breeds and compare results from each breed. 	SL11-12.1 SL11-12.1a	AG-ANI6 CRP2
Performance Indicator 4.4 Assess grooming and training needs of dogs	Recommended Application/Activity	CCSS Standards	CCTC Standards
4.4.1 Assess basic grooming needs of dogs.	<ul style="list-style-type: none"> • Demonstrate the proper grooming of a dog including: <ul style="list-style-type: none"> ○ Hair ○ Nails ○ Teeth ○ Ears ○ Eyes ○ Bathing • Critique different grooming styles for dogs. 	R11-12.3	AG-ANI2 AG-ANI7 CRP2
4.4.2 Compare the various types of training available for dogs.	<ul style="list-style-type: none"> • Observe local expert to demonstrate common training techniques. 	SL11-12.1c	AG-ANI1, AG-ANI2, CRP1

Standard 5.0 Develop Skills Necessary to Provide Care and Maintenance for Cats			
Performance Indicator 5.1 Connect the history of the cat to the modern feline	Recommended Application/Activity	CCSS Standards	CCTC Standards
5.1.1 Analyze the ancestry of the cat	<ul style="list-style-type: none"> Watch “Cats 101” by Animal Planet (www.animalplanet.com) 	SL11-12.2	AG-ANI1 CRP1
5.1.2 Evaluate how different breeds of cat were developed.	<ul style="list-style-type: none"> Create visual presentations outlining the development and characteristics of a cat breed. 	SL11-12.5	AG-ANI1 CRP11
5.1.3 Compare and contrast the different classes of cat.	<ul style="list-style-type: none"> Create a chart of popular breeds, and determine which of them are considered long hair or short hair. 	SL11-12.1 SL11-12.1a	AG-ANI6 CRP2
Performance Indicator 5.2 Assess the anatomy and physiology of the cat	Recommended Application/Activity	CCSS Standards	CCTC Standards
5.2.1 Analyze the exterior anatomy of the cat.	<ul style="list-style-type: none"> Label the various exterior parts of the cat. 	L11-12.4b L11-12.4d	AG-ANI4 CRP1
5.2.2 Analyze the parts of the digestive system.	<ul style="list-style-type: none"> Label the various parts of the cat digestive system. 	L11-12.4b L11-12.4d	AG-ANI3 CRP1
5.2.3 Analyze the Male and Female Reproductive System.	<ul style="list-style-type: none"> Label the various parts of the male and female reproductive systems. 	L11-12.4b L11-12.4d	AG-ANI3 CRP1
Performance Indicator 5.3 Assess the health and maintenance requirements of cats	Recommended Application/Activity	CCSS Standards	CCTC Standards
5.3.1 Assess the various nutritional needs of cat.	<ul style="list-style-type: none"> Design a feeding schedule for each stage of a cats life: <ul style="list-style-type: none"> o Kitten o Adult o Gestating/Lactating o Female o Senior 	R11-12.3	AG-ANI3 CRP2

5.3.2 Evaluate the reproductive and genetic management of cats.	<ul style="list-style-type: none"> • Design a parturition Box/Pen for a cat. • Create a breeding calendar for cats. 	L11-12.4c	AG-ANI4 CRP2
5.3.3 Investigate diseases commonly found in cats.	<ul style="list-style-type: none"> • Present a speech on a common disease found in cats. • Create presentation describing signs, symptoms, and treatments for common diseases in cats: <ul style="list-style-type: none"> ○ Feline Lukemia ○ Pneumonitis ○ Conjunctivitis ○ Keratitis • Look at slides through a microscope of the infection/diseased tissue and blood. 	L11-12.6 R11-12.3	AG-ANI5 CRP2
5.3.4 Research common feline parasites.	<ul style="list-style-type: none"> • Look at fecal samples under a microscope for signs of infections. • Create presentation describing signs, symptoms, and treatments for these common diseases in cats: <ul style="list-style-type: none"> ○ Feline Scabbies ○ Feline Mite • Examine a cat for signs of parasites. 	L11-12.6 R11-12.3	AG-ANI5 CRP2
Performance Indicator 5.4 Assess the grooming and training needs of cats	Recommended Application/Activity	CCSS Standards	CCTC Standards
5.4.1 Assess basic grooming needs for cats.	<ul style="list-style-type: none"> • Demonstrate the proper procedure of grooming each of these on a toy cat: <ul style="list-style-type: none"> ○ Hair ○ Nails ○ Teeth ○ Ears ○ Eyes ○ Bathing • Critique grooming styles of cats. • 	R11-12.3	AG-ANI2 AG-ANI7 CRP4
5.4.2 Research the exercise needs of cats.	<ul style="list-style-type: none"> • Research various physical activities recommended for cats. 	SL11-12.1 SL11-12.1a	AG-ANI1 CRP2

5.4.3 Compare the various types of training for cats.	<ul style="list-style-type: none"> • Research the steps in litter box training • Discuss training techniques that students have used with their cats. 	SL11-12.1 SL11-12.1a	AG-ANI2 CRP2
Standard 6.0 Develop Skills Necessary to Provide Care and Maintenance for Rabbits			
Performance Indicator 6.1 Investigate the history of the rabbit	Recommended Application/Activity	CCSS Standards	CCTC Standards
6.1.1 Analyze the ancestry of the rabbit	<ul style="list-style-type: none"> • Collect and display rabbit breed information using the American Rabbit Breeders Association's "Standard of Perfection" (Current Edition) • Write a report on the history of the domesticated rabbit 	SL11-12.1 SL11-12.1a	AG-ANI1 CRP1
6.1.2 Evaluate how different breeds of rabbits were developed	<ul style="list-style-type: none"> • Collect and display rabbit breed information using the American Rabbit Breeders Association's "Standard of Perfection" (Current Edition) • Give a presentation on a rabbit breed 	SL11-12.1 SL11-12.1a	AG-ANI1 CRP1
6.1.3 Compare and contrast the different classes of rabbits	<ul style="list-style-type: none"> • Investigate the various classes of rabbits (Meats, Research, Hair/Wool, and Pets), and create a chart to identify the common breeds that make up each class. 	SL11-12.1 SL11-12.1a SL11-12.2	AG-ANI6 CRP7
Performance Indicator 6.2 Assess the anatomy and physiology of the rabbit	Recommended Application/Activity	CCSS Standards	CCTC Standards
6.2.1 Analyze the exterior anatomy of the rabbit	<ul style="list-style-type: none"> • Label the exterior parts of the rabbit. • Utilizing the American Rabbit Breeders Association's "Standard of Perfection" judge a set of four rabbits. • Present oral reasons for a class of rabbits. 	L11-12.4b L11-12.4d	AG-ANI4 CRP2
6.2.2 Analyze the parts of the digestive system of a rabbit.	<ul style="list-style-type: none"> • Label the parts of the digestive system in rabbits. 	L11-12.4b L11-12.4d	AG-ANI3 CRP2

6.2.3 Analyze the male and female reproductive system of a rabbit.	<ul style="list-style-type: none"> Label the parts of both the male and female rabbit. 	L11-12.4b L11-12.4d	AG-ANI3 CRP2
Performance Indicator 6.3 Assess the health and maintenance requirements of rabbits	Recommended Application/Activity	CCSS Standards	CCTC Standards
6.3.1 Compare the nutritional needs and eating habits of rabbits at different ages/stages.	<ul style="list-style-type: none"> Analyze a variety of common rabbit feeds that are available at local pet retailers to determine if they will provide adequate nutrition for a pet rabbit: <ul style="list-style-type: none"> Breeding bunnies Maintenance feeding of adults Gestating/lactating female Coprophagy 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI3 CRP8
6.3.2 Evaluate the reproductive management of rabbits.	<ul style="list-style-type: none"> Develop a breeding calendar for rabbits detailing the various stages of the female reproductive cycle, conception, gestation, parturition, and lactation. Design a parturition box and environment for a rabbit. 	R11-12.3 R11-12.9	AG-ANI4 CRP2
6.3.3 Investigate common diseases and ailments of rabbits.	<ul style="list-style-type: none"> Analyze reality-based scenarios to diagnose health issues in rabbits using common symptoms of the following: <ul style="list-style-type: none"> Enteritis Snuffles Wry Neck Sore Hocks Fur Chewing Hutch Burn 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI5 CRP8
6.3.4 Investigate common parasites that affect rabbits.	<ul style="list-style-type: none"> Analyze reality based scenarios to diagnose a health issue using the common symptoms. Evaluate fecal samples under a microscope for signs of infections. Assess a rabbit for signs of parasites. 	R11-12.9 R11-12.6	AG-ANI5 CRP8

Performance Indicator 6.4 Investigate the grooming and housing needs of rabbits	Recommended Application/Activity	CCSS Standards	CCTC Standards
6.4.1 Assess basic grooming and care requirements of rabbits.	<ul style="list-style-type: none"> • Demonstrate the proper grooming of a rabbit in class, considering: <ul style="list-style-type: none"> ○ Hair ○ Nails ○ Teeth ○ Ears ○ Eyes • Trim a rabbit's nails. • Evaluate a rabbit for care needed to: hair, nails, teeth, ears, and eyes. 	SL11-12.1 SL11-12.1c	AG-ANI2 AG-ANI7 CRP2
6.4.2 Compare housing needs of rabbits at different ages/stages.	<ul style="list-style-type: none"> ○ Research books, magazines, or online resources to find adequate housing and equipment for a rabbit and develop a pricing guide for someone that is planning to purchase a rabbit as a pet ○ Hutch ○ Nesting box ○ Special lighting requirements 	SL11-12.1a R11-12.7	AG-ANI3 CRP2
Standard 7.0 Develop Skills Necessary to Provide Care and Maintenance for Common Rodents (Gerbils, Guinea Pigs, and Hamsters)			
Performance Indicator 7.1 Assess the history of domesticating gerbils, guinea pigs, and hamsters	Recommended Application/Activity	CCSS Standards	CCTC Standards
7.1.1 Research the ancestry of the gerbil, guinea pig, and hamster	<ul style="list-style-type: none"> • Create a collage of the evolution of Cavies. • Prepare a report on the ancestry of the gerbil, guinea pig, and hamster 	SL11-12.1a SL11-12.5	AG-ANI1 CRP2
7.1.2 Evaluate the differences in breeds of gerbils, guinea pigs, and hamsters	<ul style="list-style-type: none"> • Compare and contrast the different breeds in gerbils, guinea pigs, and hamsters • Use research to prepare and deliver a presentation on a breed of gerbil, guinea pig, or hamster. 	R11-12.9	AG-ANI1 CRP2

Performance Indicator 7.2 Analyze the characteristics of gerbils, guinea pigs, and hamsters	Recommended Application/Activity	CCSS Standards	CCTC Standards
7.2.1 Compare and contrast the differences between gerbils, guinea pigs, and hamsters.	<ul style="list-style-type: none"> • Create a Venn diagram outlining the similarities and the differences between gerbils, guinea pigs, and hamsters. 	R11-12.9 SL11-12.4	AG-ANI6 CRP2
7.2.2 Analyze the parts of the digestive system of Gerbils, Guinea Pigs, and Hamsters.	<ul style="list-style-type: none"> • Label the various parts of the digestive system of the gerbils, guinea pig, and hamster, describing the function of each. 	L11-12.4b L11-12.4d	AG-ANI6 CRP2
7.2.3 Analyze the male and female reproductive system of gerbils, guinea pigs, and hamsters.	<ul style="list-style-type: none"> • Label the various exterior parts of the guinea pig, and hamster. 	L11-12.4b L11-12.4d	AG-ANI4 CRP2
Performance Indicator 7.3 Assess the health and care needs of rodents	Recommended Application/Activity	CCSS Standards	CCTC Standards
7.3.1 Compare the nutritional needs of gerbils, guinea pigs, and hamsters.	<ul style="list-style-type: none"> • Research the various types of feeds and supplemental products available for gerbils, guinea pigs, and hamsters. 	SL11-12.1 SL11-12.2	AG-ANI3 CRP7
7.3.2 Investigate diseases, parasites & ailments common among rodents.	<ul style="list-style-type: none"> • Create presentation describing signs, symptoms, and treatments for common diseases, parasites, and ailments in gerbils, guinea pigs, and hamsters, noting: <ul style="list-style-type: none"> ○ Wet Tail ○ Estivation ○ Malocclusion ○ Meningitis ○ Red Nose ○ Tyzzler's Disease ○ Vitamin C Deficiency ○ Wet Tail 	SL11-12.4	AG-ANI5 CRP2

	<ul style="list-style-type: none"> Look at tissue and infected blood samples under a microscope. Evaluate Gerbils, Guinea Pigs, and Hamsters for signs of infection. 		
7.3.3 Demonstrate basic handling techniques for gerbils, guinea pigs, and hamsters.	<ul style="list-style-type: none"> Create a “How-to Guide” demonstrating the proper handling and care of a gerbil, guinea pig, or hamster. 	W11-12.6	AG-ANI2 CRP11
7.3.4 Evaluate the housing needs of gerbils, guinea pigs, and hamsters.	<ul style="list-style-type: none"> Design an environment for gerbils, guinea pigs, and hamsters, including: <ul style="list-style-type: none"> Cages Water bottles Feeders Exercise wheels Research books, magazines, or online resources to find adequate housing and equipment for rodents. 	SL11-12.2	AG-ANI3 CRP2
Standard 8.0 Develop Skills Necessary to Provide Care and Maintenance for Common Exotic Pets			
Performance Indicator 8.1 Analyze and classify small exotic pets	Recommended Application/Activity	CCSS Standards	CCTC Standards
8.1.1 Differentiate between snakes, lizards, and turtles.	<ul style="list-style-type: none"> Create a Venn diagram outlining the similarities and the differences between reptiles snakes, lizards, and turtles. 	R11-12.9 SL11-12.4	AG-ANI6 CRP2
8.1.2 Differentiate between freshwater and saltwater fish	<ul style="list-style-type: none"> Create a visual display (i.e. “Diorama”) to illustrate common types of fresh and saltwater fish. 	R11-12.9 SL11-12.4	AG-ANI7 CRP2
8.1.3 Differentiate between the various types of domesticated birds.	<ul style="list-style-type: none"> Create a Venn diagram outlining the similarities and the differences between a variety of common domesticated birds, such as the Macaw, Parrot and Conure. 	R11-12.9 SL11-12.4	AG-ANI7 CRP2
Performance Indicator 8.2 Assess the health and care needs of exotic pets	Recommended Application/Activity	CCSS Standards	CCTC Standards

8.2.1 Compare the nutritional needs of snakes, lizards, and turtles.	<ul style="list-style-type: none"> • Analyze a common food label to determine if it meets the requirement for a pet snake, lizard, or turtle. 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI3 CRP8
8.2.2 Assess the nutritional needs of fishes.	<ul style="list-style-type: none"> • Analyze a common food label to determine if it meets the requirement for saltwater or freshwater fish. 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI3 CRP8
8.2.3 Assess the nutritional needs of birds .	<ul style="list-style-type: none"> • Analyze a common food label to determine if it meets the requirement for a pet bird: <ul style="list-style-type: none"> ○ Cuttlefish bones ○ Grit 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI3 CRP8
8.2.4 Investigate and recognize the symptoms of common diseases, parasites & ailments of snakes, lizards, and turtles.	<ul style="list-style-type: none"> • Examine a snake, lizard, and turtle for signs of illness. • Analyze a scenario to diagnose the possible disease, parasite, or ailment: <ul style="list-style-type: none"> ○ Salmonella ○ Mouth Rot ○ Vitamin Deficiency 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI5 CRP8
8.2.5 Investigate and recognize the symptoms of common diseases, parasites & ailments of fishes.	<ul style="list-style-type: none"> • Examine fish for signs of illness. • Analyze a scenario to diagnose the possible disease, parasite, or ailment. • Prepare a chart of fish diseases and parasites with characteristics to look for diagnoses: <ul style="list-style-type: none"> ○ Flukes ○ White Spot ○ Fish Lice ○ Fin Rot ○ Mouth Fungus 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI5 CRP8
8.2.6 Investigate and recognize the symptoms of common diseases, parasites & ailments of birds.	<ul style="list-style-type: none"> • Examine birds for signs of illness. • Analyze a scenario to diagnose the possible disease, parasite, or ailment. • Prepare a chart of bird diseases and parasites with characteristics to look for diagnoses, include: <ul style="list-style-type: none"> ○ Capillaria Worm ○ Red Mites ○ Parrot Fever 	SL11-12.1a R11-12.9 R11-12.6	AG-ANI5 CRP8

	<ul style="list-style-type: none"> ○ Newcastle ○ Bumble Foot 		
Performance Indicator 8.3 Assess techniques for and concerns of handling exotic animals	Recommended Application/Activity	CCSS Standards	CCTC Standards
8.3.1 Investigate proper techniques for snakes, lizards, turtles, fishes, and birds.	<ul style="list-style-type: none"> • Demonstrate the proper handling of each on toy snakes, lizards, turtles, fish, and birds in class. 	SL11-12.1 SL11-12.1c	AG-ANI2
8.3.2 Assess the risks involved in handling exotic animals.	<ul style="list-style-type: none"> • Using a variety of resources, research the risks of caring for exotic animals including: <ul style="list-style-type: none"> ○ Chemical contact ○ Toxins ○ Allergic reactions ○ Bites ○ Constrictions 	SL11-12.2	AG-ANI3 CRP7
Performance Indicator 8.4 Evaluate the housing and equipment needs of exotic animals	Recommended Application/Activity	CCSS Standards	CCTC Standards
8.4.1 Compare housing and equipment needs of snakes, lizards, turtles.	<ul style="list-style-type: none"> • Research books, magazines, or online resources to find adequate housing and equipment for a snakes, lizard, and turtles, and develop a pricing guide for someone that is planning to purchase a pet, noting the following: <ul style="list-style-type: none"> ○ Terrarium ○ Vivarium ○ Heat rocks 	SL11-12.2	AG-ANI3 CRP7
8.4.2 Compare housing and equipment needs of fishes.	<ul style="list-style-type: none"> • Research books, magazines, or online resources to find adequate housing and equipment for either a fresh- or salt-water aquarium, and develop a pricing guide for someone that is planning to purchase aquarium fish: <ul style="list-style-type: none"> ○ Aquarium ○ Filter 	SL11-12.2	AG-ANI3 CRP7

	<ul style="list-style-type: none"> ○ Aerator ○ Habitat ○ Water conditioners 		
8.4.3 Compare housing and equipment needs for birds.	<ul style="list-style-type: none"> ● Research books, magazines, or online resources to find adequate housing and equipment for a snakes, lizard, and turtles, and develop a pricing guide for someone that is planning to purchase a pet, noting the need for: <ul style="list-style-type: none"> ○ Cage ○ Perch 	SL11-12.2	AG-ANI3 CRP7

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Glossary Standard 1: Small Animal Industry

1. Breed- animals that having a common origin and distinguishing characteristics.
2. Dog- *Canis* family *canidae*; a domesticated carnivorous animal which is used as a household pet, watchdog, or herder.
3. Career Development Event (CDE)- a hands-on team competition designed for FFA members to develop career-related skills.
4. Cat- *Felis* family *felidae*; a small domesticated carnivorous mammal with soft fur, a short snout, and retractile claws.
5. Companion animal- a pet or other domestic animal.
6. Pariah dog – Semi-feral dog that live in close approximation to towns, where they survive by scavenging on garbage.
7. Pets- any animal that is kept for affection and companionship.
8. Rabbit- Family *Leporiade*; a burrowing, plant-eating mammal with long ears, long hind legs, and a short tail.
9. Supervised agriculture experience (SAE)-a project done by students with help from their agricultural instructor in which they learn by doing
10. Working animal- an animal, usually domesticated, that is kept by humans and trained to perform tasks, such as guide or service animals.

Standard 2: Small Animal Safety

1. Collar- a band placed around the neck of an animal.
2. Deworm- treat an animal to free it of worms.
3. Fence- a barrier intended to prevent escape or intrusion.
4. Fleas- a small wingless jumping insect that feeds on the blood of mammals
5. Harness- a set of straps and fittings by which an animal is fastened in order to be controlled by an owner.
6. Hookworm- a parasitic nematode worm that uses hook like mouth parts to attach itself to the intestines of an animal.
7. Leash- a strap or cord for restraining and guiding a dog or other animal.
8. Mite- very small spiders belonging to the order Acari.
9. Muzzle- a guard, typically made of straps or wire, fitted over this part of an animal's face to stop it from biting, feeding or vocalizing.
10. Parasite- an organism that lives in or on another organism and benefits by deriving nutrients at the host's expense.
11. Pinworm- a common name often applied to parasitic nematodes belonging to the family Oxyuridae that infect humans and animals
12. Rabies- an infectious disease caused by a filterable virus which is communicable by means of a bite in which saliva containing the virus enters the wound.
13. Ringworm- a skin disease of humans and animals caused by parasitic fungi, usually marked by distinct, circular patches with a scaly appear.
14. Roundworm- a nematode, a parasitic one found in the intestines of mammals.
15. Salmonella- a bacterium that occurs mainly in the intestine
16. Sanitation- measures designed to maintain or restore healthful conditions, such as the treatment, removal, or destruction of contaminated or infested materials.
17. Streptococcus- any bacterium of the genus streptococcus are responsible for various diseases in humans and animals.
18. Tapeworm- a parasitic intestinal worm of a flattened, tape like form, composed of separate parts or segments
19. Ticks- a parasitic arachnid that attaches itself to the skin of a warm blooded animal from which it sucks blood, and can transmit diseases.
20. Toxoplasmosis- a disease caused by toxoplasmas, transmitted chiefly through undercooked meat, or in soil or cat feces.
21. Vaccination- a process of injecting controlled amounts of microorganism or microorganism products into an animal in an effort to prevent that animal from contracting a disease.

Standard 3: Responsible Pet Ownership

1. Animal Shelter- an establishment, that provides a temporary home or care for dogs, cats, and other animals or to be euthanized.
2. Castrate- to remove the testicles or to destroy their use.
3. Euthanasia- to induce the death of a animal quickly and painlessly.
4. Neutered- castrated or spayed animal.
5. Pet breeder- owners that keep companion animals for reproductive purposes.
6. Pet shop- specialized stores where consumers can purchase a pet and a full line of pet products.
7. Private treaty- the agreement for the sale of a property at a price negotiated directly between the vendor and purchaser or their agents.
8. Spayed- a female animal that has had her ovaries removed by surgical procedure to prevent her from reproducing.

Standard 4: Dogs

1. Adenovirus- any of a group of DNA viruses first discovered in adenoid tissue, most of which cause respiratory diseases.
2. American Dog Tick – (*Dermacentor variabilis*) – Species of hard tick that can lives in grasses and shrubs. Blood sucking arthropod parasite of the skin that requires only two-hosts to complete lifecycle.
3. Anal Sacs – Sacs that are used for marking territory, which become blocked and need emptying.
4. Arthritis – Inflammation of the joints of mammals characterized by stiffness, swelling, and soreness.
5. Brown Dog Tick – (*Rhipicephalus sanguineus*) – Species of hard tick that can survive indoors and infest kennels and households. Blood sucking arthropod parasite of the skin that requires three-hosts to complete lifecycle.
6. Canine brucellosis- caused by bacteria *Brucellosis canis* causes abortion in females, swelling of testicles in males.
7. Canine parvo virus- is a common and potentially serious viral disease in dogs, usually manifested in the intestinal tract, causing lethargy, vomiting, loss of appetite, diarrhea and sometimes death.
8. Cat flea – (*Ctenocephalides felis*) – See Dog flea.
9. Colostrum- the first secretion from the mammary glands after giving birth, rich in antibodies.
10. Conformation- the shape or structure of the animal.
11. Demodectic Mite – (*Demodex* spp.) – Live in hair follicles. Can cause loss of hair, reddening and crusting of skin. Affected animals are thought to have a deficiency in the immune system.
12. Dewclaw- a rudimentary inner toe present in some dogs.
13. Distemper- a viral disease of some animals, especially dogs, causing fever, coughing, and catarrh also may cause death.
14. Dog flea – (*Ctenocephalides canis*) – wingless, brown bloodsucking insect that infest warm-blooded animals. Bites can cause allergic reactions which can include hair loss, rash and thickening of the skin.
15. Ear mites – (*Otodectes cyanotis*) – highly contagious mites that feed on the wax and other materials found in the ear.
16. Estrus- female heat period of the animal.
17. Gestation- the length of time from conception to birth.
18. Heartworms – (*Dirofilaria immitis*) - worm transmitted by mosquitoes that live in the heart or major arteries causing extensive damage to the vital organs. Signs include frequent coughing, sluggishness, rapid tiring, and labored breathing.
19. Heart Disease – Disease of the heart either congenital (present at birth) or acquired (degeneration of valves or muscle, infections, cancer, or heartworms)
20. Hepatitis- a disease characterized by inflammation of the liver.
21. Hip dysplasia- Inherited trait that affects the hip joints and occurs more commonly in large-breed dogs.

22. Kennel cough (*Bordetella*)- upper respiratory ailment of dogs marked by coughing fever loss of appetite and possibly pneumonia.
23. Leptospirosis- caused by bacteria early signs includes high fever loss of appetite vomiting and diarrhea.
24. Pedigree- the record of descent of an animal, showing it to be purebred.
25. Sarcoptic Mite – (*Sarcoptic* spp. and *Notoedres* spp.) – Highly contagious mite that burrows within the outer layers of the skin; Causes intense itching, scratching, and rubbing of affected areas which results in a condition called Sarcoptic mange or scabies.

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Standard 5: Cats

1. *Acinonyx* – Genus group of cats that cannot fully retract its claws, only includes one member, the cheetah.
2. Conjunctivitis – Inflammation of the membrane lining the inner surface of the eyelids.
3. Feline leukemia – A retrovirus that suppresses the immune system and decreases resistance to other diseases; spread through saliva, feces, and blood.
4. Feline Scabbies – Also known as notoedric mange. A skin disease that occurs worldwide, contagious causing hair loss, thickening and crusting of the skin.
5. *Felis* – Genus group of non-roaring cats that includes all small cats and the domesticated cat.
6. Jacobson's organ – Smell and taste receptors located in the roof of the mouth of cats and reptiles.
7. Keratitis – Inflammation of the cornea.
8. Nictitating membrane – third eyelid, moves diagonally under the eyelid to help lubricate the cornea.
9. Olfactory mucosa – An area of the nasal lining that picks up smells from the air as the animal breathes.
10. *Panthera* – Genus group of roaring cats; includes lion, leopard, tiger, and jaguar.
11. Papillae – knobs on the tongue that help hold food or prey; some carry taste buds.
12. Pneumonitis – Caused by infection with *Chlamydia psittaci*, characterized by runny eyes and noses.
13. Queen – Female cat.
14. Tom – Male cat.

Standard 6: Rabbit

1. Buck – Male rabbit.
2. Coprophagy – The consuming of fecal material.
3. Doe – Female rabbit.
4. Ear mites – Common parasite that causes a watery fluid and thick brown crust to build up on the ear and can lead to wry neck.
5. Enteritis – An inflammation of the intestinal tract.
6. Fur mites – Common parasite living on the surface of the skin; may appear as dandruff.
7. Fryer – Rabbit raised for eating.
8. Fur Chewing – Habit of pulling fur from themselves caused by simple boredom, a low-fiber diet, or a nutrient deficiency.
9. Hutch – House used to keep rabbits.
10. Hutch burn – A chapped or burned condition around the external genital area of female rabbits caused by urine-soaked bedding.
11. Kit – A newborn rabbit.
12. Kindling – The birthing process in rabbits.
13. Nesting Box – A box used by rabbits to give birth and raise their young.
14. Snuffles – Disease caused by *Pasteurella* bacteria; symptoms include persistent sneezing with white-colored nasal discharge, matted fur.
15. Sore Hocks – Ulceration to the foot pad caused by the animal's body weight pressing down on the rough wire of cages.
16. Wry Neck – A twisting of the neck to one side, resulting in the head being tilted.

Standard 7: Gerbils, Guinea Pigs, and Hamsters

1. Cavy – Another name for a guinea pig.
2. Estivation – A deep sleep-like state triggered by excessively warm temperatures.
3. Malocclusion – A condition in which the upper and lower teeth grow to the extent that the animal cannot eat.
4. Meningitis – Inflammation of the membranes covering the brain and spinal cord.
5. Nocturnal – Sleeping during the day and being active at night.
6. Peripheral vision – Able to see in a wide circle or a large surrounding area.
7. Red nose – A condition in gerbils, usually caused by bacteria, that causes hair loss and red, swollen areas of the skin around the nose and muzzle.
8. Tyzzer's disease – A disease primarily of rabbits caused by the bacterium *Bacillus piliformis*. The disease causes severe diarrhea and death among young rabbits.
9. Vitamin C Deficiency – A common nutritional issue in guinea pigs.
10. Wet tail – Hamster enteritis; symptoms include wetness around the tail and rear area of the animal caused by runny diarrhea.

Standard 8: Exotics

1. Aerator – A piece of equipment used in fish tanks to facilitate the exchange of carbon dioxide in water for oxygen.
2. Aquarium – A water tank or container used to raise fish or other aquatic animals.
3. Arboreal – Living in trees.
4. Aviary – A place where large numbers of birds are kept.
5. Brille – A transparent layer that covers the eye of a snake.
6. Bumble foot – A painful ailment of the feet of birds and is usually associated with staphylococcal infections.
7. Capillaria worm – also known as threadworms – causes decreased appetite and diarrhea in affected birds; infection comes from eating contaminated feces, feed, or foodstuffs.
8. Carapace – The hard, protective upper shell on a turtle, tortoise, or terrapin; it also forms part of the vertebrae and ribs.
9. Clutch – A nest of eggs or a group of young birds.
10. Dimorphism – The male and female of a species having different physical characteristics so that they can be identified.
11. Ectotherm – An animal that is cold-blooded.
12. Feather mites – *Knemidocoptes laevis* – parasite that buries into and feeds on the feather quill; restlessness, severe scratching, feather picking, and skin irritation are signs of infection.
13. Filter – A piece of equipment used in tanks to clean impurities from the environment.
14. Finrot – Believed to be caused by a bacteria that causes the edges of the fins to lose their color, tissue to break down, and the fins to become ragged.
15. Fish Lice – Parasitic crustacean acquired when fish feed on infected plankton attaching themselves to the body of the fish with sucking mouth parts injecting a poison that can be fatal to young fish.
16. Flukes – Tiny worm-like parasites that attach themselves to the gills and body causing irritation and even death.
17. Freshwater – Water habitat that is neither brackish nor marine.
18. Habitat – Environment which an organism lives.
19. Heat rocks – Artificial rocks that are placed in reptile habitats
20. Mouth Fungus – Caused by the bacteria *Chondrococcus columnaris*; white tufty material around the mouth and white patches on skin, difficulty breathing are all symptoms.
21. Mouth rot – Fungal infection with open wounds or sores on the mouths of reptiles.
22. Newcastle – A viral disease causing loss of appetite and weight, sneezing, difficulty breathing, bright yellow-green diarrhea, paralysis and involuntary jerky movements. No cure. Suspected infection must be reported to appropriate authorities.

23. Parrot Fever – Avian Psittacosis; bacterial disease that can be transmitted to humans. Flu-like and pneumonia-like symptoms.
24. Plastron – Lower part of the shell of turtles, tortoises, and terrapins.
25. Red mites – *Dermanyssus gallinae* – parasite that feed on the blood of infected birds; infected birds are restless, scratch, and pick at their feathers.
26. Salmonella – Bacteria normally found in the digestive tract that can cause prolonged diarrhea when populations get out of control.
27. Saltwater – Water habitat that mimics ocean environment.
28. Scutes – The hard, tough scales or plates on the shell of turtles, tortoises, and terrapins.
29. Terrarium – A cage used for keeping land animals.
30. Tympanum – An external ear on lizards.
31. Vitamin Deficiency – A shortage of needed organic compounds for various chemical reactions.
32. Vivarium – Cage in which the environment is duplicated close as possible to the natural environment of the species.
33. Water Conditioners – Additives used to alter the chemical composition of the water environment in an aquarium.
34. White Spot – Also known as “Ich”; caused by the parasitic organisms *Ichthyophthirius multifiliis*; under stress the parasite multiplies rapidly causing white spots.

Common Core State Standards Grades 9-12

ELA Speaking and Listening Standards Grades 9-10

1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. **SL9-10.1**
 - a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. **SL9-10.1a**
 - b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. **SL9-10.1b**
 - c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. **SL9-10.1c**
 - d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented. **SL9-10.1d**
2. Integrate multiple sources of information presented in diverse media or format(e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. **SL9-10.2**
3. Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence. **SL9-10.3**
4. Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task. **SL9-10.4**
5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. **SL9-10.5**

ELA Speaking and Listening Standards Grades 11-12

1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. **SL11-12.1**
 - a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. **SL11-12.1a**
 - b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. **SL11-12.1b**

- c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. **SL11-12.1c**
- d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task. **SL11-12.1d**
- 2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. **SL11-12.2**
- 3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used. **SL11-12.3**
- 4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. **SL11-12.4**
- 5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. **SL11-12.5**

ELA Language Grades 9-10

- 4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies. **L9-10.4**
 - a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. **L9-10.4a**
 - b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy). **L9-10.4b**
 - c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. **L9-10.4c**
 - d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). **L9-10.4d**
- 6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. **L9-10.6**

ELA Language Grades 11-12

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies. **L11-12.4**
 - a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. **L11-12.4a**
 - b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable). **L11-12.4b**
 - c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage. **L11-12.4c**
 - d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary) **L11-12.4d**
6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. **L11-12.6**

Reading Standards for Literacy in Science and Technical Subjects Grades 9-10

1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. **R9-10.1**
2. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. **R9-10.2**
3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. **R9-10.3**
4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics. **R9-10.4**
5. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). **R9-10.5**
6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. **R9-10.6**
7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. **R9-10.7**
8. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. **R9-10.8**
9. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. **R9-10.9**

10. By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. **R9-10.10**

Reading Standards for Literacy in Science and Technical Subjects Grades 11-12

1. Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. **R11-12.1**
2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. **R11-12.2**
3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. **R11-12.3**
4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. **R11-12.4**
5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. **R11-12.5**
6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. **R11-12.6**
7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. **R11-12.7**
8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **R11-12.8**
9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **R11-12.9**
10. By the end of grade 12, read and comprehend science/technical texts in the grades 11–CCR text complexity band independently and proficiently. **R11-12.10**

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects Grades 9-10

1. Write arguments focused on discipline-specific content. **W9-10.1**
 - a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. **W9-10.1a**
 - b. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. **W9-10.1b**
 - c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. **W9-10.1c**
 - d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. **W9-10.1d**
 - e. Provide a concluding statement or section that follows from or supports the argument presented. **W9-10.1e**
2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. **W9-10.2**
 - a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. **W9-10.2a**
 - b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. **W9-10.2b**
 - c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. **W9-10.2c**
 - d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. **W9-10.2d**
 - e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. **W9-10.2e**
 - f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). **W9-10.2f**
3. Write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. **W9-10.3**
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. **W9-10.4**
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. **W9-10.5**

6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. **W9-10.6**
7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. **W9-10.7**
8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. **W9-10.8**
9. Draw evidence from informational texts to support analysis, reflection, and research. **W9-10.9**
10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. **W9-10.10**

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects Grades 11-12

1. Write arguments focused on discipline-specific content. **W11-12.1**
 - a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. **W11-12.1a**
 - b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. **W11-12.1b**
 - c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. **W11-12.1c**
 - d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. **W11-12.1d**
 - e. Provide a concluding statement or section that follows from or supports the argument presented. **W11-12.1e**
2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. **W11-12.2**
 - a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. **W11-12.2a**
 - b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. **W11-12.2b**
 - c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. **W11-12.2c**

- d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers. **W11-12.2d**
- e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). **W11-12.2e**
- 3. Write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. **W11-12.3**
- 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. **W11-12.4**
- 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. **W11-12.5**
- 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. **W11-12.6**
- 7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. **W11-12.7**
- 8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. **W11-12.8**
- 9. Draw evidence from informational texts to support analysis, reflection, and research. **W11-12.9**
- 10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. **W11-12.10**

Common Career and Technical Core Standards

Agriculture, Food, and Natural Resources Cluster

Animal Systems Career Pathway (AG-ANI)

1. Analyze historic and current trends impacting the animal systems industry. **AG-ANI1**
2. Utilize best practice protocols for husbandry and welfare based upon animal behaviors. **AG-ANI2**
3. Design and provide proper animal nutrition given desired outcomes for performance, development, reproduction, and/or economic production. **AG-ANI3**
4. Apply principles of animal reproduction given desired outcomes for performance, development, and/or economic production. **AG-ANI4**
5. Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health. **AG-ANI5**
6. Classify, evaluate and select animals based on anatomical and physiological characteristics. **AG-ANI6**
7. Apply principles of effective animal health care. **AG-ANI7**

Common Career and Technical Core Career Ready Practices (CCTC CRP)

1. Act as a responsible and contributing citizen and employee. **CRP1**
2. Apply appropriate academic and technical skills. **CRP2**
3. Attend to personal health and financial well-being. **CRP3**
4. Communicate clearly, effectively, and with reason. **CRP4**
5. Consider the environmental, social and economic impacts of decisions. **CRP5**
6. Demonstrate creativity and innovation. **CRP6**
7. Employ valid and reliable research strategies. **CRP7**
8. Utilize critical thinking to make sense of problems and persevere in solving them. **CRP8**
9. Model integrity, ethical leadership, and effective management. **CRP9**
10. Plan education and career path aligned to personal goals. **CRP10**
11. Use technology to enhance productivity. **CRP11**
12. Work productively in teams while using cultural/global competence. **CRP**