

# SOPHOMORE EQUINE SCIENCE CURRICULUM

*Sophomore  
Equine Science*



**Grade Level(s): 10**

**Curriculum Author(s):** Marisa Bedron

**Course Description:** This course introduces students to the care of horses, including: feeding, health and management practices. In addition, students will learn about careers in the equine industry such as Equine Veterinarian, Feed Representative, Horse Trainer, Riding Instructor, Farm Manager, Farrier, and other support services. Students will spend time working with the school horses as well as off campus experiences related to content.

**Year At A Glance**

Unit Title	Overarching Essential Question	Overarching Enduring Understanding	<u>Vision of A Learner “I Can” Statements</u>
<a href="#">Horsemanship</a>	How can you be a successful horse handler?	Horsemanship is the art of riding, handling and training horses that requires control of the animal by using restraints, behavior and emotional bonds.	TCC4, CCE2, DE2, TI3, P1, P3, P4, AA1, AA2
<a href="#">Equine Health &amp; Management</a>	How can you maintain the health of an equine animal?	A variety of practices is required to create an active management strategy to promote the health and welfare of an animal by setting disease prevention, detection and management procedures.	TCC2, TCC4, TI1, CCE1, CCE4, P2, AA1
<a href="#">Equine Nutrition</a>	How can you ensure proper nutrition of an equine animal?	An animal’s health is directly correlated to the nutritional requirements they receive daily by handlers and owners.	TCC1, TCC3, CCE3, TI2, TI3, AA1



## UNIT 1 - HORSEMANSHIP

### Desired Results - Goals, Transfer, Meaning, Acquisition

#### Established Goals:

##### Connecticut Agriculture, Food and Natural Resource Framework

**AS.01.02** Assess and select animal production methods for use in animal systems based upon their effectiveness and impacts.

**AS.02.01** Demonstrate management techniques that ensure animal welfare.

**AS.02.02.01.b** Utilize tools, technology and equipment to perform animal husbandry and welfare tasks.

**AS.05.02.01.a** Identify and summarize the general standards that must be met in facilities for animal production (e.g., environmental, zoning, construction, etc.)

**AS.06.03** Select and train animals for specific purposes and maximum performance based on anatomy and physiology.

**AS.08.02** Evaluate the effects of environmental conditions on animals and create plans to ensure favorable environments for animals.

##### Common Core State Standards

**CCSS.ELA-LITERACY.RI.9-10.4** Determine the meaning of words and phrases as they are used in a text, including figurative connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g. a section or chapter).

**CCSS.ELA-LITERACY.W.9-10.1** Write arguments to support claims in analysis of substantive topics in texts, using valid reasoning and relevant and sufficient evidence.

**CCSS.ELA-LITERACY.W.9-10.7** 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.

**CCSS.ELA-LITERACY.SL.9-10.2** Integrate multiple sources of information presented in diverse media or formats (e.g. visually, quantitatively, orally) evaluating the credibility of each source.

**CCSS.ELA-LITERACY.SL.9-10.5** Make strategic use of digital media (e.g. textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of finding, reasoning and evidence and to add interest.

**CCSS.ELA-LITERACY.L.9-10.3** Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

**Vision of A Learner Attributes:** Students will be able to independently use their learning to...

#### **TCC: THINK CRITICALLY AND CREATIVELY**

**TCC4:** Transfer new learning and skills to other contexts and settings beyond the classroom.

#### **CCE: COLLABORATE AND COMMUNICATE EFFECTIVELY**

**CCE2:** Seek, accept and apply actionable feedback.

#### **DE: DEMONSTRATE EMPATHY**

**DE2:** Recognize and respect their own feelings and those of others.

**TI: TAKE INITIATIVE**

**TI3:** Ask questions to direct learning and self-advocate.

**P: PERSEVERE**

**P1:** Identify and utilize personal strengths to overcome obstacles.

**P3:** Demonstrate flexibility and acceptance of setbacks to reach success.

**P4:** Engage in responsible risk-taking to grow and achieve.

**AA: ADAPT AND ADJUST**

**AA1:** Recognize that there is more than one path to success.

**AA2:** Reflect on prior experiences to recall successful pathways and strategies.

**Understandings:** Students will understand that...

- A restraint is either a device or a technique that will ensure safety of the animal and handler.
- Different types of halters are utilized when working with equine animals based on experience, animal function and availability.
- Safety protocols must be applied at all times when working with equine animals to ensure a healthy interaction between animals and handlers.
- Equine animals have behavioral characteristics of prey animals.
- Body language indicators are essential components of communication with equine animals.
- Lunging an equine animal is the first step in training an animal in advanced equestrian techniques.
- Animal communication involves a number of handler cues including vocal, physical and non-physical techniques.
- Grooming a horse promotes skin and coat health, and creates a bonding time between handlers and their animals.

**Essential Questions:**

- What is the importance of a restraint?
- How can we use different halters effectively?
- How can humans best communicate with equine animals?
- What role does grooming play in the health of equine animals?
- How can we be sure that human interactions with equine animals are healthy and safe?

**Students will know...**

- The 3 types of halters: leather, nylon, and rope and their uses in the equine industry.
- Common safety protocols when working with equine animals.
- The locations and behavioral functions of an equine Flight Zone, Balance Points and Blind Zones.
- Body language indicators - ears back, pawing, etc. - of equine animal behavior.
- The methodology behind lunging an equine animal.
- How to utilize animal behavior signals to collaborate with the

**Students will be able to...**

- Tie a quick release knot
- Utilize all 3 types of halters
- Work safely around horses and maintain safety for others
- Move horse from the barn to pasture or pasture to the barn
- Lunge and free lunge a horse in the arena
- Start, Stop, Turn and back up a horse through an obstacle course
- Thoroughly utilize tools to groom a horse
- Utilize tools to give a bath



<ul style="list-style-type: none"> <li>animal to complete tasks.</li> <li>Different grooming tools and methodology of equine grooming.</li> <li>The purpose of grooming and its health benefits.</li> </ul>	
<p><b>Key Vocabulary:</b> Quick Release Knot, Nylon, Leather, Rope, Flight Zone, Balance Point, Blind Zone, Lunging, Lunge Line, Lunge Whip, Hard Brush, Soft Brush, Curry Comb, Hoof Pick, Sweat scraper, Showmanship, cross rail, Course, Walking the course</p>	
<p><b>Assessment Evidence</b></p>	
<p><b>Performance Tasks:</b>  <i>Summative:</i> Students will demonstrate showmanship skills using the Nonnewaug Education Farm animal laboratory facilities. <b>AA2</b></p>	<p><b>Other Evidence:</b>  <i>Interim:</i> Students will complete an interim - formal question based - assessment on identification of equine behaviors and behavior indicators. <b>DE2</b></p> <p><i>Interim:</i> Students will complete a skills assessment demonstrating safe maneuvering of equine animals. <b>P4</b></p> <p><i>Interim:</i> Students will complete a combination formal question and practicum based assessment on correct grooming techniques of equine. <b>CCE2</b></p> <p><i>Interim:</i> Students will demonstrate the application of basic animal welfare tasks including: blanketing, knot tying and turn out care. <b>TCC4</b></p>
<p><b>Learning Plan</b></p>	
<ul style="list-style-type: none"> <li>Students will restrain a horse from a stall and turn out in a group into the pasture, and vice versa. <b>CCE1</b></li> <li>Students will select and apply a halter to safely restrain a horse. <b>AA1</b></li> <li>Students will complete an animal movement laboratory utilizing flight zones, balance points and blind zones to move a horse without physical restraints. <b>P1</b></li> <li>Students will individually be able to demonstrate the use of grooming tools to groom a horse. <b>TI3</b></li> <li>Students will complete a lunging lab to be assessed on body position, control of animal, animal and handler communication, use of tools, and safety. <b>P3</b></li> </ul>	
<p><b>Teacher Resources:</b>  Teacher Created Resources</p>	



## UNIT 2 | EQUINE HEALTH & MANAGEMENT

### Established Goals:

#### Connecticut Agriculture, Food and Natural Resources Framework

**AS.02.01** Demonstrate management techniques that ensure animal welfare.

**AS.05** Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.

**AS.07.01** Design programs to prevent animal diseases, parasites and other disorders and ensure animal welfare.

**AS.07.02** Analyze biosecurity measures utilized to protect the welfare of animals on a local, state, national and global level.

#### Common Core State Standards

**CCSS.ELA-LITERACY.RI.9-10.4** Determine the meaning of words and phrases as they are used in a text, including figurative connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g. a section or chapter).

**CCSS.ELA-LITERACY.W.9-10.1** Write arguments to support claims in analysis of substantive topics in texts, using valid reasoning and relevant and sufficient evidence.

**CCSS.ELA-LITERACY.W.9-10.7** 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.

**CCSS.ELA-LITERACY.SL.9-10.2** Integrate multiple sources of information presented in diverse media or formats (e.g. visually, quantitatively, orally) evaluating the credibility of each source.

**CCSS.ELA-LITERACY.SL.9-10.5** Make strategic use of digital media (e.g. textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of finding, reasoning and evidence and to add interest.

**CCSS.ELA-LITERACY.L.9-10.1** Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

**Vision of A Learner Attributes:** Students will be able to independently use their learning to...

#### **TTC: THINK CRITICALLY AND CREATIVELY**

**TCC2:** I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.

**TCC4:** I can integrate my learning to adapt to experiences in the classroom, career and life.

#### **TI: TAKE INITIATIVE**

**TI1:** I can implement a realistic plan and adapt when necessary to achieve goals.

#### **CCE: COLLABORATE AND COMMUNICATION EFFECTIVELY**

**CCE1:** I can initiate discussion with my peers and teachers about a variety of topics, respecting differing viewpoints, actively listening to others, and responding thoughtfully with peer-reviewed evidence that is free of bias.

**CCE4:** I can communicate and express my understanding in an authentic, respectful and relevant way, using the most effective mode of expression.

**P: PERSEVERE**

**P2:** I can strengthen my weaknesses by identifying, initiating and practicing appropriate strategies to become confident in my ability to overcome my challenges.

**AA: ADAPT AND ADJUST**

**AA1:** I can evaluate different approaches and justify the best pathway to success.

**Understandings:** Students will understand that...

- Daily care of horses is important to maintain good health, to recognize any inconsistency and for the overall well being and usefulness of the animal.
- Horse health can be measured by evaluating body temperature, heart rate, breaths per minute, intestinal activity, capillary refill time, level of dehydration and texture / color of mucous membranes
- An equine emergency is any situation that will compromise the long term use and health of the horse including, but not limited to, bleeding injuries, lameness, colic and eye injuries.
- Sickness can be a result of contact with a bacterium, a virus, a fungus or toxicities that may become systemic.
- Diagnosing any injury or illness means observing, examining, testing and solving based on knowledge and scientific research.
- A parasite is any living organism that gains its sustenance from the host in order to complete its life cycle.
- Parasites can be controlled through recognizing symptoms, treating infestations and prevention using best management practices such as fecal egg counts, rotational grazing and manure removal.
- A horse's hoof plays a key role in its ability to survive and function.

**Essential Questions:**

- Why is daily care important?
- Why is barn maintenance and organization important?
- How can we measure horse health?
- What constitutes an emergency?
- What are signs of a medical issue, and how can an effective solution be determined?
- What is the importance of a horse's hoof and how can we ensure it is healthy?

**Students will know...**

- Basic indicators of equine health.
- The measurement techniques of equine animal health.
- Nonnewaug High School protocol for animal emergencies.
- Common signs and symptoms of a bacterium, virus, fungus or toxic plant infection in an equine animal.
- The difference in injuries and illness that can be treated by owners versus a veterinarian specialist.
- The average life cycle of common equine parasites.

**Students will be able to...**

- Perform a basic health check - TPR - on equine animals.
- Identify signs of colic in an equine animal.
- Identify toxic plants in a pasture.
- Perform fecal exams on equine animals.
- Perform a deworming laboratory on equine animals.
- Identify an equine parasite based on what stage of the life cycle it is in.
- Identify the parts of an equine hoof.



<ul style="list-style-type: none"> <li>• Methods to prevent and manage parasites in equine species.</li> <li>• Correct care and management hooves - shoeing, scheduled farrier visits, and general maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognize the signs and symptoms of thrush in equine animals.</li> </ul>
<p><b>Key Vocabulary:</b> farrier, thrush, parasite, fecal flotation, deworming, emergency, parasite life cycle, toxic, toxicity, colic, lameness, TPR, temperature, pulse, respiration, fungus, bacteria, virus, fecal egg count, protocol, veterinarian, veterinary care, rotational grazing</p>	
<p><b>Assessment Evidence</b></p>	
<p><b>Performance Tasks:</b>  <i>Interim:</i> Students will perform general health exams on an equine resident of the Nonnewaug High School Education Farm. <b>TI1</b></p> <p><i>Interim:</i> Students will present on a specific equine parasite to peers.  <b>CCE4</b></p>	<p><b>Other Evidence:</b>  <i>Interim:</i> Students will complete a written assessment - formal question based - on veterinary care and hoof care. <b>TCC4</b></p> <p><i>Summative:</i> Students will complete a written assessment on unit materials - veterinary care, parasites and hoof care. <b>P2</b></p>
<p><b>Learning Plan</b></p>	
<ul style="list-style-type: none"> <li>• Students will perform a dewormer laboratory to administer dewormer medication. <b>TI1</b></li> <li>• Students will perform a basic health exam on an equine animal. <b>AA1</b></li> <li>• A farrier guest speaker will attend a class period to teach students about the farrier career. <b>CCE1</b></li> <li>• Students will perform a fecal flotation laboratory. <b>TCC2</b></li> </ul>	
<p><b>Teacher Resources:</b>  Teacher Created Resources</p>	





## UNIT 3 - EQUINE NUTRITION

### Desired Results - Goals, Transfer, Meaning, Acquisition

#### Established Goals:

##### Connecticut Agriculture, Food and Natural Resource Framework

**AS.03.01** Analyze nutritional needs of animals.

**AS.03.03** Utilize industry tools to make animal nutrition decisions.

**AS.06.02** Apply principles of comparative anatomy and physiology to uses within various animal systems.

**AS.07** Apply principles of effective animal health care.

**AS.08** Analyze environmental factors associated with animal production.

##### Common Core State Standards

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**CCSS.ELA-LITERACY.SL.9-10.5** Make strategic use of digital media (e.g. textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of finding, reasoning and evidence and to add interest.

**CCSS.ELA-LITERACY.L.9-10.2** Demonstrate command of the convention of standard English capitalization, punctuation and spelling when writing.

**Vision of A Learner Attributes:** Students will be able to independently use their learning to...

##### **TCC: THINK CRITICALLY AND CREATIVELY**

**TCC1:** I can ask insightful and purposeful questions to find a variety of innovative solutions.

**TCC3:** I can integrate relevant information to produce multiple, valid solutions.

##### **CCE: COLLABORATE AND COMMUNICATION EFFECTIVELY**

**CCE3:** I can show initiative in prompting group discourse and fostering collaboration among others providing actionable feedback and working with others to solve problems and / or design products.

##### **TI: TAKE INITIATIVE**

**TI2:** I can evaluate my objectives and a variety of credible resources to find the best solution for any challenge.

**TI3:** I can formulate and investigate probing questions to further my learning.

**AA: ADAPT AND ADJUST**

**AA1:** I can evaluate different approaches and justify the best pathway to success.

**Understandings:** Students will understand that...

- Different feed types produce different results in animals - weight gain, digestive health and other health considerations.
- The digestive system is a complex collection of organs that must be maintained in order for an animal to live healthy.
- Measurement of feed allows owners to manage their animals during different stages of development and life.
- Digestive disorders can originate from several types of management, genetic and environmental conditions.

**Essential Questions:**

- How does the digestive system function in order to provide energy to an equine animal?
- What are the essential understandings required to feed animals?
- How can an owner manage their equine animals to maintain a healthy digestive system and overall health?

**Students will know...**

- The differences between animal feeds - forages and concentrates.
- The different organs and their functions of the equine digestive system.
- Measurement systems for animal feeds.
- Different digestive disorders and how they can originate in an equine animal.

**Students will be able to...**

- Correctly measure an animal feed using weight and other units of measurement to mix horse grain.
- Match a digestive organ with its function.
- Evaluate the quality of an animal feed and forage.
- Identify signs and symptoms of common digestive disorders.

**Key Vocabulary:** digestive system, pseudoruminant, concentrate, feed, forage, rumination, monogastric, cecum, stomach, esophagus, large intestine, small intestines, colon, rectum, anus

**Assessment Evidence**

**Performance Tasks:**

*Interim:* Students will perform a group laboratory experiment testing the quality of a forage. **CCE3**

**Other Evidence:**

*Interim:* Students will complete an identification assessment on identifying types of feeds. **TCC1**

*Summative:* Students will complete a formal question based assessment on the unit's content - digestive system, animal feeds and digestive disorders. **TI2**

**Learning Plan**

- Students will evaluate the types of hay. **TI3**
- Students will learn the organs present in the equine digestive system and each of the organ's functions. **TCC3**
- Students will identify types of feed concentrates. **CCE3**



- Students will learn the methods of feeding for different stages of the equine life cycle. **AA1**

**Teacher Resources:**

Teacher Created Resources

