

# Kentucky 4-H Horse Program

# Horse Academy

## Level 5



University of Kentucky  
College of Agriculture,  
Food and Environment  
*Cooperative Extension Service*

**For more information on the  
Kentucky 4-H Horse Program go to :**  
<https://afs.ca.uky.edu/4h-youth/horse>

**The resources referred to in this workbook can be found in your  
County Horse Kit or online. The primary resources are listed in the  
back of this workbook.**

**For additional resources check out the Kentucky 4-H Horse  
Program Horse Discovery Web site at:**  
<http://www2.ca.uky.edu/horsediscovery/>

## HorseDiscovery

KY 4-H Horse Program

[Home](#) [Breeds](#) [Forages](#) [Bits](#) [Equipment](#) [Parasites](#) [Horseshoes](#) [Horse Selection](#) [Materials](#) [Certificate](#)

### Welcome to Horse Discovery



The Horse Discovery site has the resources you need to complete this short course about horses. There are eight sections in the course: Breeds, Forages, Bits, Equipment, Parasites, Horseshoes, Horse Selection, Materials.

Select a section to begin, and end your session with a short quiz. Before you start

### Test Your Knowledge

There are seven sections in this course. Each section ends with a quiz.

[Read more](#)

### Resources

- [Kentucky 4H Horse Program](#)
- [HorseQuest Instructional Videos](#)
- [eXtension Horses Resource Area](#)

## Level 5

The purpose of the Kentucky 4-H Horse Program Horse Academy is to provide a road map for you to learn key lessons about horse science, horse behavior, and the horse industry.

These are all important components to becoming a well rounded horseman or horsewoman. As you go through this book, complete the assignments and tasks with your certified 4-H Horse Leader and track your progress with your county 4-H Agent. Once you have completed all lessons, activities, and have demonstrated proficiency in the skills, you will be qualified to take the Level Completion Exam. This exam is to be administered by your County Agent. A 70% must be attained for completion of the level. When you complete Level 5, your agent will notify the State 4-H Horse Program Office for documentation, award, and recognition of your accomplishment.





## Level 5

### Lessons

1. Genetics
2. Muscle Anatomy
3. Digestive System
4. Biosecurity
5. Facilities
6. Taking your horse off of the farm

### Activities

1. Pedigrees
2. Horse Event
3. Colt Starting
4. Scribe or Ring Steward
5. Volunteer
6. Mentor
7. Recognize Lameness

### Skills

1. Braiding a Mane
2. Clipping a bridle path
3. Ride a simple horsemanship/equitation pattern
4. Evaluate a pasture for safety hazards
5. Load and unload a horse from a trailer
6. Estimate weight

# Lesson 1 Genetics

## The building blocks

### KEY POINTS:

What are genes?

Chromosomes

Terminology

Basic Coat Color Genetics

Discuss what you know



**Resource Material:** Equine Science Chap. 6

**Topic of discussion:** The genetics of horses are often discussed casually when talking about breeding for certain traits, or by typifying certain breeds with certain characteristics. But what are genetics, and how does it all work? Start by learning the basic concepts and vocabulary, then see how genes interact to create different coat patterns.

**Define the following:** Gene, dominant, recessive, homozygous, heterozygous, phenotype, genotype.

**Discuss coat color genetics and define:** eumelanin, agouti, and dilution genes.

**What color would the following horses be:**

$EeAa$  \_\_\_\_\_  $EEaa$  \_\_\_\_\_  $eeAa$  \_\_\_\_\_ Now, what color would you get if you added a dilution gene to each of the above colors?

# Lesson 2 Muscle Anatomy

Muscles + Bones = Movement

## KEY POINTS:

Flexion/Extension

Muscle Fibers

Names of Muscles

Discuss what you know



**Resource Material:** Alberta pp.57-58, Equine Science pp.204-206, eXtension.org- Equine Muscle Fiber Types

**Topic of discussion:** We value horses by their ability to move and athleticism. This coordinated locomotion relies heavily on the muscular system. The muscles, along with tendons, ligaments and bones work in symphony to enable a horse to run, jump, spin, turn, and stop. It is important to understand how muscles work and to learn the names of major muscles in order to make sense of how to train and condition horses.

**Learn the names of the major muscles from the diagrams in the Equine Science book, test yourselves and your friends until you can get them all correct.**

**Define the terms: Flexion and Extension. We often use the term "flex" when we really mean "contract your muscles". It takes muscles contracting to both flex and extend a joint.**

**Talk about different disciplines and discuss if you think that sport uses more fast twitch or slow twitch muscle fibers.**

# Lesson 3 Digestive System

The guts!

## KEY POINTS:

Parts of the Digestive System

What's Unique

Formulate Rations

Discuss what you know



**Resource Material:** Alberta pp. 161-166, Equine Science p.207, CES ASC-115 Formulating Rations for Horses, CES ASC-113 Nutrition of the Performance Horse

**Topic of discussion:** Knowing how the digestive system in the horse works, not only allows you to better feed and care for your horse, but it also allows you to understand why certain feeds are either necessary or harmful. It is also important to know why a horse needs forage, and how colic happens. Learn the parts of the digestive tract, relate it to your knowledge of different kinds of colic. Can you see how an impaction colic could happen? How about a torsion colic?

**Use the Cooperative Extension Fact sheets to formulate a ration for your horse. Calculate what is necessary to maintain body weight. What would you do if your horse needed to gain weight? What would you do if he needed to lose weight?**

# Lesson 4 Biosecurity

Keeping you and your horses safe.

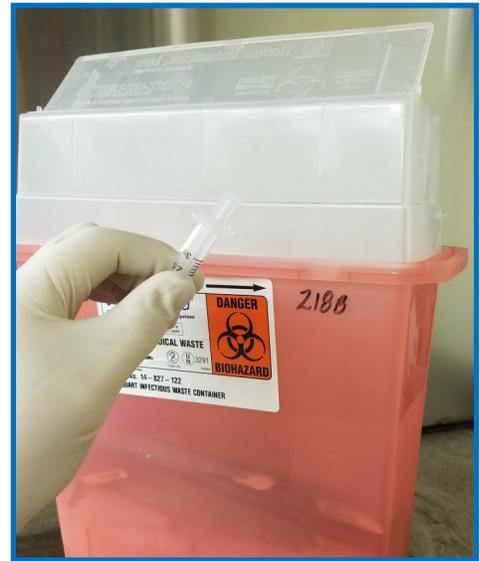
## KEY POINTS:

What is biosecurity?

What are risk factors?

Common diseases that can be easily spread at horse events

Discuss what you know



**Resource Material:** Alberta Chap. 1

**Topic of discussion:** Most of us have taken our horses to a show, or trail ride at least once. Did you think about biosecurity while you were there? Anytime we take our horses out of their normal environment, or bring a new horse into our horse's environment, there is an increased risk of disease transmission. Why do new environments and new horses increase the risk of disease? And, what are things we can do to keep our horses safe?

**What if you were in a different position? Instead of a horse owner, what if you were a show manager? What precautions would you take to make sure horses are safe and to minimize the spread of disease at your horse show?**

# Lesson 5 Facilities

Barns, sheds, run-ins, arenas....

## KEY POINTS:

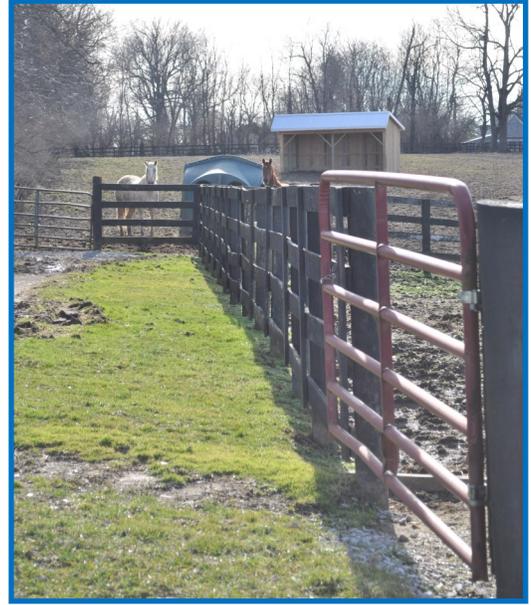
Shelter

Stall Cleaning

Manure Management

Hazards

Discuss what you know



**Resource Material:** Alberta Chap. 10

**Topic of discussion:** If horses are kept outside for long periods of time, they will need some type of shelter from the elements. This can come in many forms but ideally it would serve as a wind break and protection from rain and sun. In addition to shelters, barns, arenas, fences, and wash areas should all be well thought out to maximize safety and efficiency.

**Analyze a facility in your area. Ask the owner if you can take a tour. Ask about the various safety features and why they built it the way they did. Ask them if there is anything they would change about the place.**

**Draw your own horse facility, complete with measurements and building materials. Explain your facility to the club, why you made the decisions you did, how you would manage weather, mud, and manure. Estimate a cost for your facility.**

# Lesson 6 Taking your horse off of the farm

## Road trip!

### KEY POINTS:

- Horse instincts
- Potential fears
- Preparing for travel
- Event information
- Discuss what you know



**Resource Material:** Saddle Up Safely: Travel to a New Environment

**Topic of discussion:** In Lesson 4 we talked about biosecurity and ways to protect your horse from infectious disease when you travel. But what other things must you consider when you take your horse off of the farm? Horses are prey animals, and when introduced to a new environment will often act differently than when they are at home. They might be more skittish than normal, which could pose a safety risk to you. Read the Saddle Up Safely booklet and discuss the following questions with your group.

**Can you always expect your horse to behave exactly the same? What about a horse's instincts make putting them in new environments difficult? What are some behaviors you should expect from your horse when in a new setting? How can you help your horse better handle these situations?**

# Activity 1 Pedigrees

A horse's pedigree can carry a lot of weight when evaluating a horse for purchase or for breeding purpose. The idea is that a good horse will have a better chance of producing a good horse. Understanding pedigrees and how to read them can be key to buying a horse or to simply have a conversation with a horse owner. Do some research on your favorite breed. What are the prominent sire lines? Can you find out why those sires have desirable traits? Fill out the pedigree below for either your horse or a friend's.

The pedigree chart is structured as follows:

- Your Horse** (Sex, Color, Year Foaled)
- Your Horse's Sire** (connected to Your Horse by a solid line)
- Your Horse's Dam** (connected to Your Horse by a solid line)
- Sire's Sire** (connected to Your Horse's Sire by a solid line)
- Sire's Dam** (connected to Your Horse's Sire by a dashed line)
- Dam's Sire** (connected to Your Horse's Dam by a solid line)
- Dam's Dam** (connected to Your Horse's Dam by a dashed line)
- Great Grand Sire** (connected to Sire's Sire by a solid line)
- Great Grand Dam** (connected to Sire's Sire by a dashed line)
- Great Grand Sire** (connected to Sire's Dam by a solid line)
- Great Grand Dam** (connected to Sire's Dam by a dashed line)
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- Great Grand Sire** (connected to Dam's Dam by a solid line)
- Great Grand Dam** (connected to Dam's Dam by a dashed line)

**Terminology:**

Top Side: Sire's pedigree

Bottom Side: Dam's pedigree

Second Dam: Maternal granddam

Own Son/Daughter: A direct sire or dam

By: Your horse is "by" his sire. Ex. Rags to Riches is "by" A.P. Indy

Out Of: Your horse is "out of" his dam. Ex. Rags to Riches is "out of" Better Than Honour

Half Sibling: Two horses share a dam, but different sires. (Horses that share a sire but different dams are not referred to as siblings.)

## Activity 2 Recognizing Lameness

Lameness is a sign that something is wrong with your horse. It is their best way to communicate that they are feeling pain. It is helpful to not only be able to see when a horse is lame, but to be able to tell where the pain is coming from. Most lameness is easiest to see at the trot. Read through the resource material and discuss ways you would be able to tell if your horse is lame.

Resource material: Alberta p. 94



## Activity 3 Colt Starting and Training

Colt starting or breaking horses should only be done with caution and under the supervision of experienced individuals. However, the theory and methods used by some of the top trainers can help you understand horse behavior and how to better work with your own horse. Do some outside research on who the best trainers are. See if any are putting on clinics near you anytime soon. Read their books and watch their videos. Report back to your club about who you found, why you agree with their philosophy, and how you can apply some of their techniques when working with your horse.



## Activity 4 Scribe or Ring Steward

One of the best ways to understand what a judge is looking for in the ring is to work for one. The job of a ring steward or scribe is to assist the judge by taking notes, indicating to the gate crew when the judge is ready, communicating with the announcer as to when to call for different gaits or when to line up, double checking that the numbers written on the score card match the back numbers in the ring, and providing any other form of assistance the judge might need. You will be surprised at what you learn. Many 4-H county shows or Schooling shows welcome volunteers. Get in touch with show management of a local show to see if they will allow you to be a Ring Steward or Scribe. Report back to the club about your experience, what you learned, why it was fun, and why it was difficult.



## Activity 5 Volunteer

The nature of 4-H is volunteerism. Our programs would not be able to operate without countless volunteers putting in time and effort. Why do they do this? Because many of them benefited from these same programs when they were younger and feel the desire to return the favor. Volunteering can be in any form. Ask your county 4-H agent if there is an activity or event coming up that you could help with. Show up on time, with a positive attitude! Report back to your club about your experience volunteering. What was your job? Did you gain anything from the experience? Would you do it again? Do you think others benefited from the program that you helped with?



## Activity 6 Mentor

Mentoring goes right along with volunteering. Can you think back to when you were first starting in 4-H? Was there an older club member that you looked up to? Ask your Certified Volunteer Leader or 4-H Agent if there is an opportunity for you to serve as a mentor. Is there a younger club member who rides the same discipline that you do? Is there a junior horse bowl, or judging team that you can help coach? Find an opportunity to share your knowledge and experience with 4-H'ers that are younger than your or who are just starting out riding or competing. Report back to the club about your experience.



## Activity 7 Research a horse event

It is easy for people in the horse industry to get very comfortable with what they know. Many people will ride one type of horse, or one type of discipline their entire life, and never venture beyond their comfort zone. This is an opportunity for you to broaden your horizon. Kentucky is a wonderful place to live if you like horses. Just about any type of sport or show that involves horses can be found in this state. Do some research. Find a horse sport or event that you've never been to. Learn the rules, who can compete, and the history of the event. Try to attend as a spectator if possible. If not, find videos of the event. Report back to your club about the horse event you researched.



## Skills Sheet

This list of skills must be performed for your Certified 4-H Leader. You must complete the skill in a safe and proficient manner to the satisfaction of your leader. Once accomplished, have the leader sign and date the appropriate skill.

◇ Braid and band a mane

**4-H Leader Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

◇ Clip a Bridle Path

**4-H Leader Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

◇ Ride a simple horsemanship/equitation pattern

**4-H Leader Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

◇ Evaluate a pasture and barn for safety hazards

**4-H Leader Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

◇ Load and unload a horse from a trailer

**4-H Leader Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

◇ Use 2 different methods to guess the weight of a horse

**4-H Leader Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

# Kentucky 4-H Horse Program

## Horse Academy Level 5

This certifies that \_\_\_\_\_, has completed all requirements for the Horse Academy Level 5. This includes but is not limited to; lessons, activities, skills, and received a score of \_\_\_\_\_ on the Level 5 Completion Exam.

These accomplishments are verified by:

\_\_\_\_\_ Date \_\_\_\_\_

4-H Certified Volunteer Leader

\_\_\_\_\_ Date \_\_\_\_\_

County 4-H Agent



## References

### **Alberta Horse Manual**

Alberta Horse Manual. 4-H Branch Alberta Agriculture and Forestry, 2015.

### **Equine Science**

Griffiths, Jean T. *Equine Science: Basic knowledge for horse people of all ages*. Equine Network/Source Interlink media, 2008.

### **Saddle Up Safely**

Saddleupsafely.org

### **Cooperative Extension Service (CES) Fact Sheets University of Kentucky**

<http://www2.ca.uky.edu/agcomm/pubs.asp>

### **Horse Discovery Webpage**

<https://afs.ca.uky.edu/horse-discovery>

### **Horse.eXtension.org**

**All online references are linked on  
the KY 4-H Horse Website at:**

<https://afs.ca.uky.edu/equine/Horse-Academy>









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