MARYLAND 4-H HORSEMANSHIP STANDARDS
MONTHLY LEARNING LESSONS

DECEMBER: Health Care and Veterinary Knowledge
Separate into systems, diseases, transmission, foot/hoof, shoeing, vital signs, etc.

(LAST UPDATED June 8, 2012)

LEARNING RESOURCES
Below is a list of learning resources that can be found in our 4-H reference and resource books. This will help volunteers to learn the information before teaching and 4-H members when studying. Please note that Levels 1-3 are in red ink and Levels 4-6 are in blue ink.

Pony Club A Manual:

- Systems of Movement: The Skeletal and Muscular Systems: Pages 223-229
- The Circulatory System: Pages 229-231
- The Lymphatic System: Pages 231-233
- The Respiratory System: Pages 233-236
- The Digestive System: Pages 236-240
- The Urinary System: Pages 240-241
- The Nervous System: Pages 242-243
- The Endocrine System: Pages 243-249
- The Skin: Pages 249-250
- Anatomy of the Lower Leg and Foot: Pages 251-256
- Conformation and Soundness: Pages 265-273
- Functions of the Foot: Pages 274-276
- Shoeing and Trimming Principles: Pages 280-282
- Trimming and Shoeing to Correct Problems: Pages 282-283
- Types of Shoes: Pages 283-288
- Exercise Physiology: Pages 289-295
- Azoturia (Equine Exertional Rhabdomyolysis): Pages 299-300
- Determining the Age of a Horse by Teeth: Pages 331-337
- Tooth and Mouth Problems: Pages 337-339
- Inoculations: Pages 350-351
- Exposure to Strange Horses: Pages 351-353
- Disease Processes: Pages 353-357
- Specific Diseases and Ailments: Pages 358-362
- Drugs and Medications: Pages 362-368

Pony Club C Manual:

- The Pony’s Digestive System: Pages 185-187
- Health Care Records: Pages 205-206
- Immunizations: Pages 206-207
- Health Care Schedules: Pages 207-208
- Teeth and Dental Care: Pages 211-215
- Diseases and Prevention: Pages 215-227
- First-Aid Kit: Pages 227-229
- First Aid for Serious Wounds: Pages 229-232
- Thermoregulation: Temperature Control: Pages 237-239
- Important Reasons for Shoeing: Page 251
- Shoeing Schedule: Pages 251-253
- Farrier Tools: Pages 253-254
- Hot and Cold Shoeing: Pages 254-255
- How to Tell Good Shoeing from Bad: Pages 255-257
- Shoeing Problems: Pages 257-258
- Types of Shoes: Pages 258-259
- Basic Horse Anatomy: Pages 311-3314
- Blemishes and Unsoundnesses: Pages 324-331

Pony Club D Manual:

- Cleaning and Checking the Feet: Pages 199-205
- Hoof Growth, Trimming and Shoeing: Pages 205-207
- When to Call the Veterinarian: Pages 209-210
- Signs of a Healthy Pony: Page 210
- Signs of Sickness: Page 211-212
- Recognizing Lameness: Pages 212-215
- Vaccinations: Pages 215-216

The Horse:

- Skeletal System: Pages 90-98
- Muscular System: Pages 99-103
- Respiratory System Pages 104-110
- Cardiovascular System and Blood: Pages 111-117
- Digestive System: Page 118
- Urinary System: Page 119
- Nervous System: Pages 119-125
- Endocrine system: Pages 126-127
- Reproductive System: Pages 128-129
- Unsoundness and Blemishes: Pages 156-168
- The Digestive Tract: Pages 189-193
- Rate of Passage: Page 194
- Site of Digestion: Pages 196-200
- Founder: Pages 397-300
- Heaves: Page 301
- Colic: Page 302
- Eating Problems: Pages 303-305
- Metabolic Disorders: Pages 306-308
- (Mare) Reproductive Tract: Pages 315-321
- Physiology of Reproduction: Pages 322-336
- Endocrine Control: Pages 337-341
- Gestation: Pages 342-351
- Anatomy of the (Stallion) Reproductive Tract: Pages 354-359
- Semen Production: Pages 360-383
- Castration: Pages 384-386
- Horse-Breeding Problems and Procedures: Pages 390-443
- Genetics: Pages 445-586
- Infectious Diseases: Pages 595-603
- Vaccination Program: Page 604
- Metabolic and Miscellaneous Disease: Pages 605-607
- First Aid: Pages 608-611
- (Feet and Leg) Anatomy: Pages 683-706
- (Feet and Leg) Function: Pages 707-718
- Hoof Care: Pages 719-752

Equine Science:

- Equine Genetics: Pages 85-104
- What is “Normal”?: Pages 154-164
- First-Aid Kit: Pages 164-166
- Some Common Equine Health Issues: Pages 167-183
- Vaccination Recommendations: Pages 191-192
- Keep Your Animals Healthy: Pages 192-196
- Equine Anatomy: Pages 199-218

Feeding and Care of the Horse:

- Infectious Disease Problems and Vaccination Programs: Pages 165-175
- Dental Problems and Care: Pages 175-178
- Foot Care: Pages 178-179
- Skin and Hair-Coat Care: Pages 179-180

Horses and Horsemanship:

- Foot Care: Pages 47-50

Horse Science

- Functional Anatomy and Action: Pages 8-11
- Unsoundnesses and Blemishes: Pages 12-13
- Age Determination: Pages 14-17
- Principles of Reproduction: Pages 22-26
- Anatomy and Function of Digestive System: Pages 27-31
- Health & Sanitation Principles: Pages 45-46
Horse Industry Handbook:
- Age Determination: HIH 240
- Equine Dentistry: HIH 405
- Avoiding Hyperthermia in the Horse: HIH 410
- Recognizing the Healthy Horse: HIH 425
- Colic in the Horse: HIH 435a
- First-Aid for Horses: HIH 440
- Equine Immunization and Infectious Disease Control: HIH 445
- Common Feet and Lower Leg Problems of the Horse: HIH 455
- Tying Up in Horses: HIH 460
- Foot Structure and Function: HIH 505
- Foot Balance: HIH 510
- Shoe Styles: HIH 515
- Foot Care Guidelines: HIH 525
- Foot Care Tools: HIH 530
- Trimming and Shoeing the Sound Horse: HIH 535
- Common Foot Problems and Solutions: HIH 540
- Common Foot Problems and Solutions Table: HIH 540a
- Equine Influenza: HIH 605
- Equine Rhinopneumonitis: HIH 610
- Strangles in Horses: HIH 615
- Equine Viral Arteritis: HIH 620
- Easter, Western and Venezuelan Encephalomyelitis in Horses: HIH 625
- Equine Infectious Anemia: HIH 630
- Equine Colic: HIH 635
- Founder: HIH 640
- Tetanus in Horses: HIH 645
- Potomac Horse Fever: HIH 650
- Borreliosis (Lyme Disease) in Horses: HIH 655
- Equine Salmonellosis: HIH 660
- West Nile Encephalitis in Horses: HIH 665
- Equine Protozoal Myeloencephalitis: HIH 670
- Hyperlastosis Cutis/Herda in Quarter Horses: HIH 675
- Rabies in Horses: HIH 680
- Vesicular Stomatitis in Horses: HIH 685
- Respiration in the Horse: HIH 810
- The Equine Cardiovascular System: HIH 830
- Equine Muscular System: HIH 840
- Exercise Physiology in the Equine Athlete: HIH 850
- Water & Electrolytes and the Prevention of Thermal Injury: HIH 860
- Reproductive Anatomy and Physiology of the Mare: HIH 910
- Reproductive Anatomy and Physiology of the Stallion: HIH 920
- Detection of Estrus and Manipulation of the Estrous Cycle: HIH 930
EDUCATIONAL ACTIVITIES
Below is a list of educational hands-on activities to do with 4-H members. Please note that Levels 1-3 are in red ink and Levels 4-6 are in blue ink.

Youth Leaders Manual
**BEG 103: Tract to Success**
- Combine art and science while learning parts of the digestive tract
- Identify different classes of horses for feeding
- Discover the capacity of digestive tract organs
- Use math skills to estimate feed intake
- Discover key words for digestive anatomy

**BEG 104: An Apple a Day**
- Learn basic equine disease descriptions and terminology
- Evaluate a pasture and stable for winter care of a horse
- Use math skills to determine water consumption and cooling efficiency
- Observe the vital signs of horses to evaluate the health of a horse

**BEG 105: How Old is your Horse?**
- Learn equine dental terminology
- Learn anatomy of mouth
- Learn to mouth a horse
- Use geometry to draw a horse’s mouth

**BEG 106: Heel to Toe**
- Understand hoof growth characteristics
- Use math skills to measure the dimensions of the hoof
- Learn common hoof terminology
- Identify the structures of the hoof

**BEG 109: Equine ER**
- Learn common terminology associated with equine medical care
- Encourage group interaction and learning through an Equine ER board game

**BEG 114: Lockjaw: Tetanus**
- Learn common terminology associated with tetanus
- Identify possible causes of tetanus
- Create a tetanus vaccination schedule for horses of various ages
BEG 115: Healthy as a Horse
- Identify vital signs and parameters to observe on the horse
- Discover characteristics of a healthy horse
- Learn how to make these observations and evaluate your horse

BEG 116: Pedicure Utensils
- Identify common farrier tools
- Learn the steps involved in trimming and shoeing a horse
- Experience the trimming and shoeing process

BEG 119: Heart to Heart
- Identify the four chambers of the heart
- Build a model to demonstrate blood flow through the cardiovascular system
- Observe and compare a horse’s heart rate and a person’s heart rate

INT 203: Tract to Success
- Identify organs and capacity of the digestive tract
- Determine rate of passage of digesta through digestive tract
- Learn to convert from English to Metric units use math skills to determine body weight
- Introduction to body condition scoring system

INT 204: An Apple a Day
- Observe changes in the vital signs of various horses throughout the year
- Design posters describing seasonal care and maintenance of horses
- Distinguish the characteristics of the mouth of horses at different ages
- Make an electrolyte mix and compare to commercial mixes

INT 205: How Old is your Horse?
- Learn equine dental terminology
- Learn time frames for teeth eruptions
- Learn to mouth a horse
- Use physical characteristics of teeth to age a horse

INT 206: Heel to Toe
- Identify the five sensitive and insensitive structures of the hoof
- Identify common hoof terminology
- Identify a properly and improperly balanced hoof
- Identify and understand hoof growth characteristics

INT 221: Equine Pedicure
- Observe the rate of hoof growth over time
- Learn the functions of the hoof parts
- Learn to properly fit a shoe to a horse’s hoof
INT 225: *It’s All in the Stride*
- Develop an understanding of exercise physiology and the exercising horse
- Recognize the difference between different muscle fiber types
- Learn how to calculate cardiac output of an exercising horse
- Visualize the amount of blood the heart pumps per minute during maximal exercise

INT 226: *Mare Reproduction*
- Learn terminology related to reproduction
- Learn function of the reproductive tract
- Learn function and path of hormones involved in mare reproduction

INT 227: *Stallion Reproduction*
- Learn terminology involved in stallion reproduction
- Observe the preparation and breeding of stallions
- Learn the major reproductive organs and their function

INT 228: *Tummy Ache*
- Develop a basic understanding of colic in the horse
- Use creativity and oral communication to develop a model of different colic types
- Learn from a veterinarian diagnoses and treatment of abdominal pain

INT 229: *Mr. Bones*
- Learn the parts of the equine skeletal system
- Develop the ability to identify and understand the consequences of skeletal deviations
- Learn how to identify common blemishes

INT 231: *Does the Shoe Fit?*
- Learn the parts of the shoe
- Learn the different shoe styles and their uses
- Identify nail parts and learn the different types of nails

ADV 303: *Tract to Success*
- Identify organs and capacity of the digestive tract
- Identify nutrients absorbed by different organs of the digestive tract
- Learn the relationship between English to Metric systems
- Use math skills to determine body weight
- Learn to use the body condition scoring system

ADV 304: *An Apple a Day*
- Use math skills to calculate daily feed requirements
- Learn about vaccinations for horses
- Learn the art of aging horses by teeth
- Use art and science to learn and assess body condition of horses
**ADV 321: Equine Pedicure**
- Learn the steps in trimming and shoeing a horse
- Develop logic skills necessary for an interview
- Develop organize and writing skills
- Develop interpretation skills

**ADV 323: Putting the Pieces Together**
- Learn the basic parts of the horse and equine skeletal system
- Develop the ability to identify good conformation and structural correctness
- Learn how to identify common blemishes

**ADV 325: It’s All in the Stride**
- Develop an understanding of exercise physiology and the exercising horse
- Recognize the differences between different muscle fiber types
- Learn how to calculate cardiac output of an exercising horse
- Visualize the amount of blood that the heart pumps per minute during maximal exercise

**ADV 326: Mare Reproduction**
- Learn terminology used in discussion of mare reproductive anatomy
- Learn pathways of hormones and their target organs
- Develop writing skills in learning mare reproduction

**ADV 327: Stallion Reproduction**
- Learn terminology involved in stallion reproduction
- Observe the preparation and breeding of stallions
- Develop writing and creative skills in preparing a newsletter

**ADV 334: Common Hoof Problems**
- Learn to recognize common foot problems encountered by horses
- Understand the causes and treatments of these common diseases

**ADV 335: Family Resemblance**
- Develop an understanding of the basic concepts of genetics
- Learn how to use heritability information to better select for specific traits
- Identify genetic defects and develop an understanding of how to prevent such diseases in the future

**ADV 336: Estrus Detection and Manipulation**
- Learn the signs of a mare in estrus
- Learn about management tools used in manipulation the mare’s estrous cycle
- Develop skills for logical thinking and reasoning when present a problem situation
Junior Master Horsemen (JMH) Level One: *(note, if requested we can make copies of pages)*

- Handy Quick-Check Health Inventory: Pages 107-109
- The Pinch Test for Dehydration: Pages 111-114
- Important Numbers and Vital Signs: Pages 115-117
- Preparing an Equine First-Aid Kit: Pages 118-120
- In-a-Fix Horse Emergencies: Pages 121-123

Junior Master Horsemen (JMH) Level Two: *(note, if requested we can make copies of pages)*

- Concho’s Smile: Pages 57-59
- Heart Healthy Horse: Pages 63-65
- The Long and Short of a Horse’s Digestive Tract: Pages 97-102

Junior Master Horsemen (JMH) Level Three: *(note, if requested we can make copies of pages)*

- Horse Systems Lingo: Pages 3-6
- Horse Structure: Pages 7-9
- Basic Gender and Reproductive Terminology: Pages 32-34
- Equine Infectious Anemia and the Coggins Test: Pages 52-56
- Understanding a Vaccination Program: Pages 58-60
- Core Disease: West Nile Virus: Pages 61-63
- Good Bones… Good Conformation: Pages 69-70
- If the Shoe Fits, Wear It!: Pages 112-115

Head, Heart, & Hooves (Level 2):

- No Bones About It: Pages 6-7
- Limp or Lump: Pages 8-9
- Long in the Tooth: Pages 18-19
- Sweet Tooth: Pages 20-21
- Time to Hoof It: Pages 22-23
- Kicking the Tires: Pages 30-31
- Stacking Up: Pages 32-33

Stable Relationships (Level 3):

- Repro Roundup: Pages 6-7
- Tis the Season to be Foaly: Pages 8-9
- Fishing the Gene Pool: Pages 10-11
- Colic, Strangles & Flu, Oh My!: Pages 12-13
- Quit Bellyaching!: Pages 16-17
- Take Your Best Shot: Pages 18-19
ONLINE INSTRUCTIONAL RESOURCES/LESSON PLANS

Below is a list of educational activities and lesson plans to do with 4-H members. Please note that Levels 1-3 are in red ink and Levels 4-6 are in blue ink.

Educational Articles:

- Lameness in the Horse
  http://www.horseridinguk.co.uk/lameness.htm
- Blemishes and Unsoundness Study Guide
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_unsoundness_mi.pdf
- Assessing the Health and Well-Being of Horses
  http://www.extension.org/pages/Assessing_the_Health_and_Well-being_of_Horses
- Temperature, Pulse, and Respiration in Horses
  http://www.extension.org/pages/Temperature,_Pulse_and_Respiration_in_a_Horse
- Vital Signs
- Vital Signs Chart
- Treating Cuts and Tears in Horses
  http://www.extension.org/pages/Treating_cuts_and_tears_in_horses
- Basic First-Aid Kit for Horses
  http://www.extension.org/pages/Basic_first_aid_kit_for_horses
- UPenn Gross Anatomy
  http://cal.vet.upenn.edu/projects/grossanat/index.htm
- Anatomy and Physiology
- The Equine Back
- Circulatory and Respiratory Systems
- Digestive Tract Study Guide
- Digestive Tract Diagram and Table
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_skeletal_system_.pdf
- The Digestive System of the Horse
- Head and Neck Anatomy
- Equine Joints
- Foreleg Anatomy and Physiology
- Hindleg Anatomy and Physiology
- Cross Sectional Leg Anatomy – Upenn
  http://cal.vet.upenn.edu/projects/eqdistal/xanat/carpus/r1/xradius1.htm
- Muscles
- Tendons and ligaments
- Tendons, Ligaments, and Joints Study Guide
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_tendons_ligament.pdf
- Skeletal system
  http://www.cyberhorse.net.au/cgi-bin/tve/displaynewsitem.pl?20040208skeletalbasics.txt
- Skeletal system study guide
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_skeletal_system_.pdf
- Basic Dental Care for Horses
  http://www.extension.org/pages/Basic_Dental_Care_For_Horses
- Algorithm for Aging a Horse by Teeth
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_teeth_algorithm_.pdf
- Teeth Study Guide
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/c3_teeth_mid_cal.pdf
- Teeth Flash Cards
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_teeth_flashcards.pdf
- Teeth Handout
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_teeth_mid_cal.pdf
- Equine Dentition
- Determining the Age of Horses by Their Teeth
  http://www.extension.org/pages/Determining_the_Age_of_Horses_by_Their_Teeth
Diseases and Conditions Study Guide
http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_diseases_condition.pdf

Tetanus, Rabies, and Botulism

Tetanus
http://www.extension.org/pages/Tetanus_in_horses

EVA, PHF, and Rabies

Exertional Rhabdomyolysis/Azoturia/Tying Up
http://www.cvm.umn.edu/umec/lab/RER_new/

Exertional Rhabdomyolysis

Strangles
http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_strangles_ema_d.pdf

Strangles
http://www.extension.org/pages/Strangles_in_horses

Tetanus
http://www.cyberhorse.net.au/csl/tetanus.htm

Vaccinations Explained

AAEP Vaccination Chart

AAEP Vaccination Guidelines

Coggins’ Disease/ EIA

Equine Infectious Anemia
http://www.extension.org/pages/Equine_Infectious_Anemia_in_horses

Equine Influenza
http://www.extension.org/pages/Disease:_Equine_Influenza
http://www.extension.org/pages/Influenza_in_horses

West Nile Virus
http://www.extension.org/pages/West_Nile_Virus_in_horses

EPM/ Equine Protozoal Myeloencephalitis
http://www.extension.org/pages/Equine_Protozoal_Myeloencephalitis_(EPM)

Encephalomyelitis
http://www.extension.org/pages/Encephalomyelitis_in_horses

Rhinopneumonitis
- Laminitis and Colic
  http://www.extension.org/pages/The_Role_of_Nutrition_in_Horse_Colic_and_Laminitis
- Laminitis and Founder
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_laminitis_and_fo.pdf
- Equine Laminitis or Founder
  http://www.extension.org/pages/Equine_Laminitis_or_Founder
- Basic Hoof Care
  http://www.extension.org/pages/Basic_Horse_Hoof_Care
- Cleaning a Horse’s Hoof
  http://www.extension.org/pages/Cleaning_a_Horse's_Hoof
- The Equine Foot
- Farrier Tools
  http://www.cooperhandtools.com/brands/diamond/index.cfm
- Hoof and Leg Cross-section
  http://www.horseshoes.com/anatomy/horsesense/horsesense.htm
- Hoof and Leg Diagrams and Cross-sections
  http://www.horseshoes.com/anatomy/equistar/equistar.htm
- Anatomy of the Foot Study guide
- Foot and Shoeing Study Guide
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_foot_shoeing_cla.pdf
- Foot and Shoeing Handout
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_foot_and_shoeing.pdf
- Common Hoof Problems
  http://www.extension.org/pages/Common_Hoof_Problems
- Blood Pumping Mechanism of the Hoof
  http://www.extension.org/pages/Blood_Pumping_Mechanism_of_the_Hoof
- Bones of the Hoof
  http://www.extension.org/pages/Bones_of_the_Hoof
- How a Horse’s Hoof Grows
  http://www.extension.org/pages/How_a_Horse's_Hoof_Grows
- Sensitive Structures of the Foot
  http://www.extension.org/pages/Sensitive_Structures_of_the_Hoof
- Understanding the Equine Hoof
  http://www.extension.org/pages/Understanding_the_Equine_Hoof

- External Parts of the Hoof
  http://www.extension.org/pages/External_Parts_of_the_Horse_Hoof

- Common Drugs Used in Horses

- Drugs and Medications for Horses
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_drugs_medications.pdf

- Reproductive System

- Reproductive Physiology and Anatomy of the Mare
  http://www.extension.org/pages/Understanding_Reproductive_Physiology_and_Anatomy_of_the_Mare

- Mare Breeding Soundness and Reproductive Anatomy
  http://www.extension.org/pages/The_Mare:_Breeding_Soundness_Examination_and_Reproductive_Anatomy

- Stallion Breeding Soundness and Reproductive Anatomy
  http://www.extension.org/pages/The_Stallion:_Breeding_Soundness_Examination_and_Reproductive_Anatomy

- Horse Breeding Basics
  http://www.extension.org/pages/Horse_Breeding_Basics

Educational Activities

- Parts of the Body worksheet

- Parts of the Body worksheet answer key

- Equine Digestive System Game

- Parts of the Leg worksheet
http://www.ponyclub.org/resource/resmgr/hm_resource_page/horse_part_-legs_-member.pdf

- Parts of the Head worksheet
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/horse_part_-_head_-member.pdf

- Parts of the Head worksheet Answer key

- Skeletal System Diagram

- Equine Science Test

- Equine Science Test answer key

- Horse Skeleton Quiz
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/study_guide_horse_skeleton_q.pdf

- Health and Diseases Test with answers

- Link to Equine Science Final Exam and answers
  http://intermountain-ponyclubs.org/2010/01/06/equine-science-exam-questions/

- Link to Lameness, Wounds, and First Aid test and answers
  http://intermountain-ponyclubs.org/2010/01/06/equine-science-exam-questions/

- Farrier tools and Shoeing Worksheet

- Your Horse’s Vital Signs
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/vital_signs_for_member.pdf

- Your Horse’s Vital Signs Answers
  http://www.ponyclub.org/resource/resmgr/hm_resource_page/vital_signs_for_teacher.pdf

VIDEOS