Horseless Horse Project Unit 4
Horse Science

Horseless Horse Projects
I don't own a horse, but . . .

Directions:
The horseless horse projects are available for all 4-H youth. Animal ownership, care, and riding are not requirements. Members with horses may, however, enroll in this series. All participants should be active in a club or project group supervised by a volunteer project leader.

Four units are available and should be completed in order. Unit I - Introduction To The Horse (9-10 years of age); Unit II - Horses Are Fun (10-12 years of age); Unit III - Horses and Horsemanship (12-14 years of age); and Unit IV - Horse Science (14 years of age and older).

Members may progress through the series at their own speed; there are no definite time or age requirements. All new members should start with Unit I. Clubs or groups may add to and vary the series according to need and interest. Members may repeat units with new and added events and activities. Members completing Unit IV may elect to enroll in the 4-H Horse Self-determined Project. Horseless horse project members are eligible to participate in all 4-H horse events except any that require the use of a project horse. Four-H members may also consider additional supporting projects such as veterinary science, safety, and leadership. Members may include riding time and lessons as options under experience. They may also include such work as grooming, cleaning tack, helping with horse events, etc. Tests and inspectors or leaders must be arranged for at the local level.
Project Requirements
To complete this project, you must:

• Participate in the 4-H club program.
• Complete the topics covered in this book.

Section I - Experience
(Minimum of 200 hours in this unit)

A. Work and Study Record

<table>
<thead>
<tr>
<th>Month</th>
<th>Describe type of meeting, study, riding, and work related to the horse.</th>
<th>Hours</th>
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<tbody>
<tr>
<td>September</td>
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<td>October</td>
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<td>July</td>
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<tr>
<td>August</td>
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</table>

B. List events you participated in or assisted with (at any level).

This must include at least six of the following: trail ride, handicapped riding, horse show, horse judging contest, horse bowl contest, junior horsemanship or junior stock contest, horse school or seminar, driving event, dressage event, polo contest, rodeo, steeplechase meet, fox hunt, reining contest, horse race, cutting contest, 4-H Camp, Club Congress, combined training event, roping contest, barrel race, horse sale, demonstration contest, or public speaking contest.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
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</tbody>
</table>
C. Do you regularly read at least two horse magazines? Name them.


E. View at least two horse films or video tapes. Name them.

F. Give at least two visual presentations or speeches about horses.
   Date ____________  Topic __________________________  Audience ____________________________
   Date ____________  Topic __________________________  Audience ____________________________

G. Outline at least one community service project for which you provided the major leadership.

H. Submit an Accumulated 4-H Achievement Record For State Competition (any area). Date submitted ______

I. List at least three additional 4-H projects you have completed in areas other than horse. (You must complete at least one veterinary science project).

   ______________________________________________________
   ______________________________________________________
J. Serve as an apprentice for at least one day for one of the following: farm manager, trainer, feed store, farrier, tack shop, horse show manager, veterinarian. Work for or with this person and outline the work or daily activities.

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

K. Name and outline at least five career occupations in the horse field.

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

L. You must serve as a junior leader and teach younger 4-H members. Describe your work.

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
Section 2 – Knowledge

A. Measure a horse and record the height in hands. ________________________________

B. Using a special tape measure, measure a horse for body weight. Record the estimated weight.

_____________ pounds.

C. Draw or trace a picture of the teeth of a two-year-old, a three-year-old and a five-year-old horse.

D. Briefly discuss the origin of the horse.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

E. Draw or trace and label the skeleton of the horse.
F. Draw or trace the outline of the horse, designate and label at least ten unsoundnesses.

G. Draw or trace and label the reproductive tract of the mare.
H. Observe at a farm the breeding of a mare (movie may be substituted).
   Date _______________
I. Observe at a farm the foaling of a foal (movie may be substituted).
   Date _______________
J. Observe the shoeing of a horse (movie may be substituted).
   Date _______________
K. Read a book (article or chapter) about inheritance in horses.
   Date completed _______________
   Title and author
   ___________________________________________________________________________
L. Record the following averages for the normal mature horse.
   Pulse rate _______________ Temperature_______________
   Respiration rate _______________
M. Record the following for the average mare.
   Length of gestation _______________
   Length of estrous cycle _______________
   Length of estrus (heat period) _______________
N. Consult with a veterinarian or professional about a basic preventative medicine program. Outline the details.
   ___________________________________________________________________________
   ___________________________________________________________________________
   ___________________________________________________________________________
   ___________________________________________________________________________
O. Work with a computer instructor in your school. Develop one of the following: inventory for five horses,
   health record for one or more horses, budget for keeping a horse, balancing a ration, breeding and foaling
   record. Do a print-out and attach it below or outline the results.
   ___________________________________________________________________________
   ___________________________________________________________________________
   ___________________________________________________________________________
   ___________________________________________________________________________
P. With the help of your Extension Agent, prepare and have analyzed a hay sample for forage test. List the kind of hay and test results below.

Q. With the help of your Extension Agent, prepare and have analyzed a soil sample for a horse pasture. Record below the test results and fertilization recommendations.

R. Briefly discuss pasture management.

S. Observe or assist with a hay-making operation (movie may be used).

Date _______________

T. Identify, study, and record the following for feedstuffs.

<table>
<thead>
<tr>
<th>Forages</th>
<th>Protein</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Timothy hay</td>
<td>_______</td>
<td>_______</td>
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<tr>
<td>Alfalfa hay</td>
<td>_______</td>
<td>_______</td>
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<tr>
<td>Pasture (kind____________________)</td>
<td>_______</td>
<td>_______</td>
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</table>

<table>
<thead>
<tr>
<th>Protein Supplement</th>
<th>Protein</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Soybean meal</td>
<td>_______</td>
<td>_______</td>
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</table>

<table>
<thead>
<tr>
<th>Energy</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Corn</td>
<td>_______</td>
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<tr>
<td>Oats</td>
<td>_______</td>
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<tr>
<td>Barley</td>
<td>_______</td>
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<tr>
<td>Molasses</td>
<td>_______</td>
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</tbody>
</table>
U. Study and record the daily nutrient requirements for the following horses.

<table>
<thead>
<tr>
<th>Vitamin A</th>
<th>lbs.</th>
<th>lbs</th>
<th>.lbs.</th>
<th>Grams</th>
<th>Grams</th>
<th>I.U.</th>
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<tbody>
<tr>
<td>400 lb. weanling</td>
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<tr>
<td>700 lb. yearling</td>
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<tr>
<td>1000 lb. mature horse (idle)</td>
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<tr>
<td>1000 lb. mature horse (hard work)</td>
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<tr>
<td>1000 lb. lactating mare</td>
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</tbody>
</table>

V. Draw or trace and label the digestive system of the horse.

W. Using the square system, compute a 15% protein ration from shelled corn and soybean oil meal. Diagram the results.
X. List and discuss a daily ration for a hard-working horse. Include feeding management, cooling-out, watering, feeding, etc.

Y. Discuss a training and conditioning program for a hard-working horse. Include new sports medicine techniques.

Z. Briefly discuss the cause, prevention, and treatment of the following diseases, parasites, and vices.

Diseases

1. Equine encephalitis

2. Strangles

3. Tetanus

4. Azoturia

5. Laminitis
<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>6.</td>
<td>Potomac Fever</td>
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<tr>
<td>7.</td>
<td>Fescue problems with mares</td>
</tr>
<tr>
<td>8.</td>
<td>Heaves</td>
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<tr>
<td>9.</td>
<td>Colic</td>
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<tr>
<td>10.</td>
<td>Aflatoxins</td>
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<tr>
<td>11.</td>
<td>Equine Infectious Anemia</td>
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<tr>
<td>12.</td>
<td>Equine encephalomalacia</td>
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<tr>
<td>13.</td>
<td>Navicular</td>
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</tbody>
</table>
Parasites

1. Flies

2. Ticks

3. Mites

4. Bots

5. Ascarids

6. Strongyles
Vices

1. Woodchewing

2. Cribbing

3. Bolting feed

4. Shying

5. Halter pulling

6. Weaving in the stall

7. Kicking

8. Biting

Section 3 - Dismounted Abilities
Give the date on which you properly demonstrated the following to a designated leader or inspector.* (Must do at least ten of the following). Leader may add to the list.

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Signature of Leader</th>
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</table>
| 1. | Identify good quality and poor quality grain. | _________ | _______________________
| 2. | Identify good quality and poor quality hay. | _________ | _______________________
| 3. | Identify good quality and poor quality pasture. | _________ | _______________________
| 4. | Discuss in detail all safety precautions for working with horses. | _________ | _______________________
| 5. | Discuss safe fencing and unsafe fencing for horses. | _________ | _______________________
| 6. | Develop a stable management record and budget for keeping a horse. | _________ | _______________________
| 7. | Observe artificial insemination of a mare. | _________ | _______________________
| 8. | Discuss fire prevention for the barn and stable. | _________ | _______________________
| 9. | Observe the evaluation of semen collected from a stallion. | _________ | _______________________
| 10. | Observe freeze branding. | _________ | _______________________
| 11. | Observe a veterinarian giving shots. | _________ | _______________________
| 12. | Observe a veterinarian treating a sick horse. | _________ | _______________________
| 13. | Discuss what to do for various emergency conditions until a veterinarian arrives | _________ | _______________________
| 14. | Feed and water a horse. | _________ | _______________________
| 15. | Twitch a horse. | _________ | _______________________
| 16. | Load and unload a horse. | _________ | _______________________
| 17. | Diagram a gymkhana course. | _________ | _______________________
| 18. | Diagram a hunter course. | _________ | _______________________
| 19. | Diagram a trail class course. | _________ | _______________________
| 20. | Care for a horse after a demanding ride | _________ | _______________________
| 21. | Harness and drive a horse or a team. | _________ | _______________________
| 22. | Trim a hoof. | _________ | _______________________
| 23. | Administer a deworming agent (advised by a veterinarian). | _________ | _______________________
| 24. | Take the temperature, pulse rate, and respiration rate of a horse. | _________ | _______________________
| 25. | Clean tack. | _________ | _______________________
| 26. | Longe a horse. | _________ | _______________________
| 27. | | _________ | _______________________
| 28. | | _________ | _______________________
| 29. | | _________ | _______________________
| 30. | | _________ | _______________________
Section 4 - Mounted Abilities
Give the date on which you properly demonstrated the following to a designated inspector or leader. This entire section is optional. You must have received riding instructions before attempting this section.

1. Review safety precautions for riding.
2. Ride in a ring - walk, trot, and canter both ways.
3. Complete a trail ride.
4. Special tests (to be added and devised by the leader).

Project Reports
Photos - News Articles
First Aid For People
You must complete a first aid and/or CPR course taught by an approved instructor.

Date _______________     Signature of Instructor __________________________________________________

Project Story

This is to certify that _________________________________________ has by quiz or practical demonstration,
 successfully completed all of the requirements of this record book to qualify as a Horse Scientist. This member
 must be at least 14 years of age and must have completed the three previous books before this book is forwarded
to state.

Dates Completed
Unit I - Introduction To The Horse ___________________
Unit II - Horses Are Fun _________________________
Unit III - Horses and Horsemanship _______________

4-H Leader _________________________________________________________ Date __________________

Extension Agent _________________________________________

Approved as a Horse Scientist:
(Extension Agent to forward to State Horse Specialist). All 4-H members completing will receive a state certificate.

State Horse Extension Specialist _______________________________ Date __________________