Scoring Your Horse

4-H SCIENCE BLAST!

Educational Elements

Key Concept:
Awareness of animal body characteristics and utilization of the body conditioning scoring system to analyze a horse's physical condition

Overview:
The *Scoring Your Horse* lesson plan is designed to assist leaders in teaching students about the different body condition scores of horses. Participants will view a video and then take part in a hands-on activity to help them understand which characteristics of an animal's body contribute to this score. Understanding a horse's body condition score can assist in making nutrition and management decisions.

Age Level:
Ages 13 to 15

Life Skills:
Communication, critical thinking and teamwork

Success Indicators:
After completing this activity, participants will be able to:
- Determine why it is important to know the body condition score of an animal.
- Identify the factors affecting the body condition of animals.
- Identify body condition scores of horses and assess if management decisions should be made in order to change or maintain that score.
- Identify the six body parts of a horse that will help determine its body condition.

Materials & Methods

Preparation Time:
15–20 minutes

Lesson Time:
30–45 minutes

Space:
An outdoor or indoor space where participants can easily hear; seating is optional.

Materials:
- ☐ Flipcharts or other large paper (enough for demonstration) (Flipcharts are large sticky notes that are usually 25 inches by 30 inches that you can buy at office supply stores.)
- ☐ Markers
- ☐ For the body cavities: empty toilet paper rolls or foam balls such as foam footballs
- ☐ For the ribs and bones: pipe cleaners, bendable straws or some type of string such as shoelaces
- ☐ For the fat layers: cotton balls, socks or tissues
- ☐ For the skin: nylons, balloons, aluminum foil or clear plastic wrap
- ☐ Clear tape or liquid glue for each team
- ☐ Resealable plastic sandwich bags (one per team)
- ☐ "Horse Body Condition Scores and Descriptions" handout (one for each participant)
- ☐ Large copy of "Six Areas of Focus for Equine Body Condition Scoring" (Figure 1)
- ☐ Tape to hang Figure 1.
- ☐ *The Introduction to Equine Body Condition Scoring* video: https://youtu.be/JqHd2cvUfUs

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Vocabulary:

- **accentuated –** Standing out; noticeable.
- **conformation –** Form; structure.
- **discernible –** Seen; recognized.
- **emaciated –** Abnormally thin.
- **lumbar processes –** The vertebrae between the rib cage and the pelvis.
- **prominent –** Standing out; noticeable.
- **spinous processes –** The bony projection of the back of each vertebra.
- **tailhead –** The base of the tail.
- **transverse processes –** The bony projection of the left and right side of each vertebra.
- **withers –** The ridge between the shoulder blades of the horse.

Six Areas of Focus for Equine Body Condition Scoring

Background Information:

Dr. Don Henneke developed a body conditioning scoring system that has provided a standard for the horse industry to use across breeds and by all people. The system assigns a score of 1 to 9 to a particular body condition. This is an improvement over rating the animal using vague words such as "good," "fair" or "bad," which can have different meanings to different people.

The horse's body condition measures the balance between the food it eats and the amount of energy it burns. Body condition can be affected by a variety of factors such as food availability, reproductive activities, weather, performance or work activities, parasites, dental problems and feeding practices. Since the body condition of a horse will affect its overall health, it is important to achieve and maintain proper body condition.

The "Horse Body Condition Scores and Descriptions" handout is adapted from a table in an article in the *Equine Veterinary Journal* (Henneke, Potter, Kreider, & Yeates, 1983), which describes Dr. Henneke's body conditioning scoring system. You will use this handout to help teach this lesson.

Instructions:

Before the meeting:

1. Review the lesson, watch the video beforehand and gather any supplies you will need.

2. Make copies of "Horse Body Condition Scores and Descriptions" handout – enough for each participant.

3. Print one large copy of Figure 1: "Six Areas of Focus for Equine Body Condition Scoring." Use a copier, or use a computer or projector to increase the image size. You will hang this up during the lesson.

4. Consider the size of the group before determining how many body condition scores you will use and the number of teams you will divide the group into. For example, with a group of 30, use five body condition scores and divide the group into teams of six participants each. You can divide the body condition scores in many different ways. For three teams you might assign one team with "thin," one team with "moderate" and one team with "fleshy." For five teams, you might assign each team one of the following body condition scores: "poor," "thin," "moderate," "fleshy" and "extremely fat." Decide how many teams to use based on the number of participants in the group.

5. Consider the ages and experience levels of your participants as you determine which materials to provide for the teams. For each team, gather materials for the body cavities, the ribs and bones, the fat layers and the skin. Place the materials in resealable sandwich
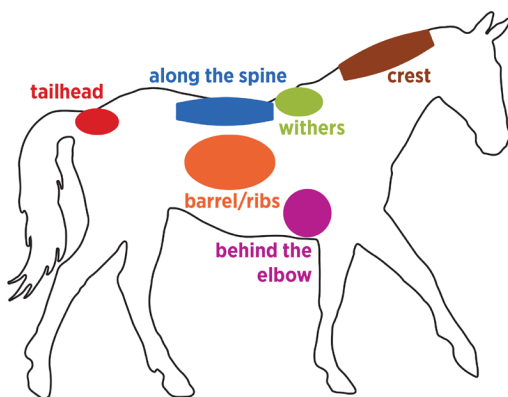
bags and label them, one for each team. (Note: You may want to have extra materials in case something breaks while the teams are designing their animals.)

6. Place the bags of supplies in a supply station where participants can gather their needed materials.

7. Prepare two flipcharts to record participants' answers. On one flipchart (or multiple if space is needed), write the questions from step 3 in the "During the Meeting" section. On another flipchart, create a chart similar to Table 1 below for step 5 in the "During the Meeting" section. Prepare the appropriate number of table sections based on the number of teams you have.

Table 1: Fill in each body condition score with the appropriate characteristics.

Poor (1)	Thin (3)	Moderate (5)	Fleshy (7)	Extremely Fat (9)
(record participants' answers here)	(record participants' answers here)	(record participants' answers here)	(record participants' answers here)	(record participants' answers here)

8. Recruit one or more teen or adult volunteers to help with the activity. Allow them to act as reviewers and show them the "Horse Body Condition Scores and Descriptions" handout before they assist the teams with their projects.

During the meeting:

1. Introduction (Read aloud or paraphrase the following):

   Keeping our horses healthy is extremely important. Many factors affect a horse's health. Today we are going to focus on 1) How to keep our horses healthy, 2) What factors affect the body condition score of animals and 3) How to determine the body condition score of an animal.

2. Show the included video, *Introduction to Equine Body Condition Scoring*.

3. On a wall, post the flipchart that you created previously that contains questions. Make sure it's visible to all participants so they can review their answers during the rest of the activity. As you ask participants the questions, record their answers under the questions.

   What six parts of the animal should we focus on to determine a body condition score? (Answers should include: crest (neck), withers, behind the elbow, barrel (ribs), along the spine, tailhead). (After participants name the parts correctly, display the enlarged copy of Figure 1. Have volunteers come up and point to each part.)

Which factors can affect the body condition of an animal? (Answers might include: nutrition, exercise, health of the animal)

Why is it important to be able to determine a body condition score of an animal? (Answers should include something such as "to know when the horse is too thin or too fleshy and change its diet and exercise accordingly.")

4. Introduction (Read aloud or paraphrase the following):

   A body condition score is based on a number of characteristics on the animal's body. After reviewing each quality, a score can be given to the animal and steps can be taken to improve its score and health.

5. Ask the following question and record the answers on the chart (Table 1) prepared on the flipchart. Pass out the "Horse Body Condition Scores and Descriptions" handout.

   What are some characteristics of each body condition score that will help us determine a score for our animals? (Have participants refer to the "Horse Body Condition Scores and Descriptions" handout that you passed out.)

   Accept answers such as the following:
   - For "thin" – ribs and other bones can be seen, no muscle mass present
   - For "moderate" – ribs easily felt, not much fat covering
   - For "fleshy" – ribs not easily felt, too much fat covering

6. Before breaking participants into teams, read or paraphrase the following instructions:

   Each team will work together to create an animal model for a body condition score. You are not required to use all of the materials provided. Once your team has the model designed and built, all team members should cross their arms.

   A volunteer helper will come around to the teams when you are finished and review the model you built to make sure all body parts correspond to the body condition score you received.

7. Break participants into teams as discussed in "Before the Meeting" step 3. Have each team spread out and form a circle. Assign each team a body condition such as "thin," "moderate," "fleshy" and so on. Have one representative from each team come to the supply table to collect the bag of materials needed.

8. Have participants complete designing and building the models they were assigned in step 7.

9. Once all teams have made an effort to design and build their animal models, provide each team 2 minutes to present its model to the larger group. Suggest that the teams present in order from "thin" to "fleshy" or from "fleshy" to "thin."

10. Once each team has described why its body condition score relates to the animal it built and how the body condition could be improved, ask the larger group if there are any questions or concepts that need clarification.

Check for Understanding:

Take a minute to present this personal system, which can help determine a body condition score:

(Read aloud or paraphrase the following):

Make a fist as I am doing. We can relate the feeling of the back of our hands to the different body condition scores. By feeling the back of our palms, we are unable to feel the specific fingers, similar to not being able to feel the ribs on our animals. (Run fingers over back of your hand.) *If we run our fingers over the bottom section of the fingers where rings are placed* (demonstrate)*, we can differentiate the fingers but there is still a sufficient amount of "fat coverage," similar to a moderate body condition score. By feeling the section of finger closer to the fingernail* (demonstrate)*, we can feel more bone instead of fat covering, similar to a thin body condition score. This can help you decide whether your animal is too thin or too fleshy.*

Have the students practice feeling the difference between the body condition scores.

Ask the group the following questions.
▸ *What was difficult about designing your model to portray the body condition score you were given?*
▸ *How does animal health and nutrition influence the animal's body condition score?*

Alignment to Science and Engineering Practices

How does 4-H increase science literacy?

4-H has a long-standing reputation of engaging youth in experiential, inquiry, hands-on activities. These activities enhance formal (public school) science education through their alignment to the eight Science and Engineering Practices identified by the National Research Council on page 42 in their report *A Framework for K-12 Science Education (http://www.nap.edu/catalog/13165/a-framework-for-k-12-science-education-practices-crosscutting-concepts*). Alignment to the practices was determined by Tracy D'Augustino, Michigan State University Extension educator. (See figure, *Alignment to the National Research Council Science and Engineering Practices* on page 6.)

Ways to Extend:

For Older or More Experienced Participants:
▸ Prepare enough materials for each team to make a model for each body condition score.
▸ Have team members discuss and present specific steps to improve the body condition scores for the models they made.

For Younger or Less Experienced Participants:
▸ Label the materials based on which part of the body they should represent.

Alignment to the National Research Council Science and Engineering Practices

Science & Engineering Practice	Action	Activity Step Number
1. Asking questions and defining problems	Youth define the problem – determining the body condition of a horse.	(During the Meeting 3)
	Youth discuss ways to ensure the healthy body condition of a horse.	(During the Meeting 5)
2. Developing and using models	Youth build a model of a horse with the assigned body condition and explain the characteristics of that body condition.	(During the Meeting 6–10)
3. Planning and carrying out investigations		
4. Analyzing and interpreting data	Youth watch a video and discuss specific characteristics used to determine the body condition of a horse.	(During the Meeting 2–3)
5. Using mathematics and computational thinking		
6. Constructing explanations and designing solutions	Youth discuss why specific characteristics indicate a specific body solution.	(During the Meeting 3)
	Youth describe their model's body condition and tell how it could be improved.	(During the Meeting 10)
7. Engaging in argument from evidence	Youth explain why a specific characteristic indicates a certain body condition and discuss how the body condition could be improved.	(During the Meeting 10, Check for Understanding)
8. Obtaining, evaluating, and communicating information	Youth gather evidence using the video, background information and additional resources to identify body condition characteristics and ways to improve body condition, and share that information with their group and others.	(During the Meeting 10, Check for Understanding)

References & Resources:

Henneke, D. R., Potter, G. D., Kreider, J. L., & Yeates B. F. (1983). Relationship between condition score, physical measurements and body fat percentage in mares. *Equine Veterinary Journal*, *15*(4), 371–372.

Kentucky Equine Research. (2010). *Body condition score chart*. Versailles, KY: Author. Retrieved from http://www.ker.com/library/misc/Body-Condition-print.pdf

National Research Council. (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas.* Washington, DC: National Academies Press.

Nestle Purina (2001). *Body condition system*. Wilkes-Barre, PA: Author. Retrieved from http://research.unc.edu/files/2012/11/CCM3_032387.pdf

Acknowledgments:

4-H Science Blast Scoring Your Horse Handout:
Horse Body Condition Scores and Descriptions

Score	Condition Description
1 - Poor	Animal extremely emaciated. Spinous processes, ribs, tailhead, and point of hip and point of buttocks project prominently; bone structure of withers, shoulders, and neck easily noticeable; no fatty tissue can be felt.
2 - Very Thin	Animal emaciated. Slight fat covering over the base of spinous processes; transverse processes of the lumbar vertebrae feel rounded; spinous processes, ribs, tailhead, and point of hip and point of buttocks prominent; withers, shoulders, and neck structures faintly discernible.
3 - Thin	Fat built up about halfway on the spinous processes; transverse processes cannot be felt; slight fat cover over ribs; spinous processes and ribs easily discernible; tailhead prominent, but individual vertebrae cannot be identified visually; point of buttocks appear rounded but easily discernible; point of hip not distinguishable; withers, shoulders, and neck accentuated.
4 - Moderately Thin	Slight ridge along back; faint outline of ribs discernible; tailhead prominence depends on conformation, but fat can be felt around it; point of hip not discernible; withers, shoulders, and neck not obviously thin.
5 - Moderate	Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spinous processes; shoulders and neck blend smoothly into body.
6 - Moderate to Fleshy	May be slight crease down back; fat over ribs spongy; fat around tailhead soft; fat beginning to be deposited along the side of withers, behind shoulders, and along the sides of neck.
7 - Fleshy	May have crease down back; individual ribs can be felt, but there is noticeable fat between ribs; fat around tailhead soft; fat deposited along withers, behind shoulders, and along neck.
8 - Fat	Crease down back; difficult to feel ribs; fat around tailhead very soft; area along withers filled with fat; area behind shoulder filled with fat; noticeable thickening of neck; fat deposited along inner thighs.
9 - Extremely Fat	Obvious crease down back; patchy fat appearing over ribs; bulging fat around tailhead, along withers, behind shoulders, and along neck; fat along inner thighs may cause them to rub together; flank filled with fat.

Six Areas of Focus for
Equine Body Condition Scoring

crest

along the spine

tailhead

withers

barrel/ribs

behind the
elbow