Understanding and Applying Veterinary Science
Module 1: Behavior
Facilitator Guide
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# Understanding and Applying Veterinary Science - Module 1: Behavior

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Facilitator Tips:
How to get the most from this curriculum

Teaching and Learning Strategies
All activities in the Understanding and Applying Veterinary Science in 4-H curriculum were designed using experiential learning and inquiry. Experiential learning (EL) is grounded in the idea that experience is essential to learning and understanding. Specifically, EL involves a recurring sequence of three distinct steps: 1) an experience ("Do") that involves learner exploration; 2) a period of reflection ("Reflect") where learners share their reactions and observations, process their experience, and make generalizations to real-life examples; and 3) an opportunity to apply ("Apply") new knowledge and skills in an authentic manner, which helps learners deepen and broaden their understanding (it helps learning last!).

Inquiry is a teaching and learning strategy whereby learners are engaged in activities that require the observation and manipulation of objects and ideas in order to construct knowledge and develop skills. Inquiry is grounded in experience, focuses on the use and development of critical thinking skills, and targets the learning and application of specific content knowledge.

The inquiry-based activities in the Understanding and Applying Veterinary Science in 4-H curriculum were designed using the 5-step EL cycle (Pfeiffer and Jones, 1983): Experience, Sharing, Processing, Generalizing, and Application. It is recommended that adequate time be allotted for youth learners to proceed through each step in order for learning to be maximized.

Organization of Learning Environment
Creating the environments where learning takes place

The activities in the Understanding and Applying Veterinary Science in 4-H curriculum were designed to be facilitated in a small group-learning environment. Learners construct understanding through inquiry using observations, the manipulation of objects and ideas, and personal reflection. However, learning is a social endeavor where dialogue and reflection with others are critical elements. Therefore, creating physical and social environments where learners can carry out inquiry will help them organize their thoughts and develop an understanding of the content and processes being emphasized in specific curriculum activities.
Facilitator Tips:
How to get the most from this curriculum

Curriculum Activity Layout

- Activity Title
  The activity title introduces the facilitator to the topic that will be addressed during the activity. A subtitle may specify the area of focus within the topic.

- Background Information
  This introductory section provides facilitators with a brief overview of the subject matter and offers examples that help to explain why the topic is important. This section may also include brief descriptions of the sections included in each activity (e.g., concepts and vocabulary, life skills targeted, subject links to education standards, and an overview of activities.)

  **Facilitator Tip:** The background information is **not** meant to be shared with the youth prior to the activity. Rather, it is intended to support facilitators by providing factual information that may help ground and inform group discussions.

- Time Required
  Each module includes an estimate of the time needed to complete the activities. The actual time required for the activities will vary based on level of learner interest, size of the group, age of the group members, and the setting in which the activities take place.

- Learning Objectives: Concepts and Vocabulary
  Facilitators are provided with a list of defined concepts and vocabulary that represent key curriculum content that is meant to be discovered by the youth through their exploration, reflection, and discussion with others.

  **Facilitator Tip:** The list should **not** be provided to the youth at the beginning of the activity. At the end of each activity, the facilitators should ensure that the appropriate terms and concepts have been discovered by or introduced to the youth.

- Life Skills
  Life skills are abilities that help youth become productive, contributing members of society. The activities are designed to provide youth with the opportunity to practice particular life skills that are utilized in everyday life. The life skills being targeted are listed for each activity. Learn more about the Targeting Life Skills model at: http://www.csrees.usda.gov/nea/family/res/pdfs/Targeting_Life_Skills.pdf

- National Science Education Standards Supported
  The Next Generation Science Standards are guidelines for educators regarding what K-12 students should know, comprehend, and be able to do in order to be scientifically literate, competent members of society. Each activity supports at least one of the Next Generation Science Standards Crosscutting Concepts. For more information about the Next Generation Science Standards, visit: http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20-%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf

- Suggested Groupings
  Activities are designed for youth to work in pairs, small groups, large groups, or individually. The suggested groupings are meant to help facilitate quality learning among the youth.
Facilitator Tips:
How to get the most from this curriculum

- **Materials Needed**
  A list of the materials needed to complete the activities is provided for the facilitator. The list describes the materials to be used, as well as how many of each item is required for each activity. Most materials are provided (these are marked with an *); however, other materials will need to be obtained by the facilitator.

- **Getting Ready**
  This section describes what needs to be done by the facilitator to prepare for the activity. It is highly recommended that facilitators review this list carefully and prepare necessary materials prior to activity implementation.

- **Opening Questions/Prompts**
  
  **Facilitator Tip:** This is the point where each activity begins with the youth.

  Questions or prompts presented at the beginning of each activity are meant to draw the youth into the topic being addressed in the activity. Responses to the questions will also provide the facilitator with an understanding of what the youth already know about the topic. Each question is designed to be open-ended and to support collaboration within the group. Facilitators should encourage the youth to record their answers to these introductory questions on the provided flip chart paper, as this is an important part of the learning process.

  **Facilitator Tip:** Ask the questions/prompts as they are written. Open-ended questioning is a key element of inquiry-based learning.

- **Procedure (Experiencing)**
  This is the part of the curriculum when the youth experience and complete the activity itself. It is highly recommended that facilitators review the procedure prior to implementing with youth so the activity flows smoothly from one section to another. It is important for youth to record their observations, ideas, and other thoughts during the procedure on the flip chart paper provided, as this is an important part of the learning process.

- **Sharing, Processing, and Generalizing**
  Following the activity procedure there is a period of reflection, during which time the youth come back together as a large group and share their observations with each other. This is an opportunity for youth to communicate their findings, listen to what others discovered, consider the various thought processes, and learn from each other. This section helps to solidify what the youth have learned throughout the course of the activity.
Facilitator Tips:
How to get the most from this curriculum

- **Concept and Term Discovery/Introduction**
  At this point of the activity, most of the concepts will have most likely already been discovered by the youth. Many concepts will have already been defined by now as well. However, some technical terms may need to be introduced to the youth. The facilitator needs to confirm that all important terms and concepts have been defined.

  **Facilitator Tip:** Ensure that all terms/concepts have been discovered by or introduced to the youth. Additionally, make certain that any misconceptions have been addressed.

- **Concept Application**
  The true test of understanding takes place when learners attempt to apply their new knowledge and skills to authentic situations. At this point of the activity, youth have already completed the hands-on activities that have introduced the new concepts and skills. The concept application section provides the facilitator with activities that allow youth the opportunity to take what they have learned and apply it to independent, real-world situations. This application may be subdivided according to level of knowledge and experience of the learners. This application of knowledge is a critical step of the learning process. It is recommended that the youth be required to participate in the application activity and report back on their experience at the following group meeting.

- **References:**
  Following the concept application section, the facilitator is provided with a list of references. The references list can be used as an additional resource by the facilitator to learn more information about the topics addressed during the activity.
References


Background Information

Activity 1: Observing Animal Behavior

A strong understanding of normal animal behavior is an important part of being an animal owner. Behavior often serves as a good indicator of the animal's health. By becoming familiar with the animal's normal behavior, owners are able to more easily notice abnormal behavior and pain behavior that could indicate a health concern. Pain behavior refers to pain affecting behavior in ways that are noticeable. Before youth can begin to understand the abnormal behaviors of their animals, they must possess some understanding of their animal’s behavior profile. An animal’s behavior profile is essentially the set of normal behavior patterns that have been observed.

While observation alone may not be a sufficient evaluation of health, behavior assessment serves as a strong starting point to further judge possible health concerns of the animal. A change in behavior is often a sign of disease or physical pain, so noticing changes in behavior can serve as an important prompt to visit a vet and investigate possible health concerns. Whether the animal is experiencing acute pain or chronic pain, a visit to the vet is an important step in trying to solve the animal's health problem. Acute pain can vary in severity, generally lasts somewhere between a few days to a few weeks, and is often easily treated by vets. Chronic pain, on the other hand, is often much more difficult to treat and can last anywhere from months to years.

There are many common behavior signals, exhibited by many different species, which can be an indication of poor health or pain. Whether the animal exhibits a change in posture or gait or displays abnormal levels of aggression or anxiousness, common behavior signs such as these should prompt animal owners to seek veterinary care. An animal’s posture can tell a lot about its health and state of mind. Posture refers to an animal’s body stance, or how an animal holds their body when they are standing or sitting. Abnormal postures, such as hunching, huddling, and crouching, are good indicators of health and wellness problems. Similarly, a change in gait, or a change in the way an animal walks, is a good indicator that the animal is experiencing some sort of pain.

A change in activity level is another common abnormality that indicates a possible health concern. Lethargy, for instance, is abnormal, slow, sluggish behavior, and can be classified as decreased activity. Restlessness refers to frequent changes of position and abnormal activity during normal times of rest. Both of these behaviors indicate pain or issues with health.

When animals exhibit guarding, they alter posture and protect areas of themselves that are currently affected by pain in order to minimize possible future pain. In some cases, instead of protecting a painful area, animals will exhibit self-biting, which refers to an attraction to an area of pain. Animals also overgroom, or lick specific areas, due to an attraction to an affected area. Self-mutilation, like self-biting and overgrooming, can be a sign of distress, or stress that an animal is physiologically unable to cope with.

Vocalizations or sounds that animals produce, can be voluntary or involuntary, and are often associated with pain or discomfort in animals. Common vocalizations that indicate pain include grunting, growling, hissing, whimpering, and teeth grinding. Some vocalizations, including growling, can also be a sign of aggression, or behavior connected to the causing of physical harm. While aggression is linked to offensive behavior, anxiety and anxiousness, on the other hand, are linked to defensive behavior, that is brought on by some sort of threat. While panting is often used by animals as a cooling method, excessive panting can also be a sign of pain or poor health.
Learning Objectives

- Youth will gain an understanding of the role that animal behavior plays in the assessment of animal health and well-being.
- Youth will make observations, classify behaviors and make comparisons within and across species.

Concepts and Vocabulary

- **Acute Pain**: Pain that is an alert to possible disease or threat to the body; usually lasts between a few days and a few weeks.
- **Aggression**: Behavior that is connected to the causing of physical harm in another animal or person.
- **Anxiousness**: Behavior that is connected to defensiveness; helps animals to cope with potentially dangerous situations.
- **Behavior Profile**: An animal’s set of observable, normal behavior patterns.
- **Chronic Pain**: Pain that persists after the healing of an injury or health condition and is often difficult to understand and treat, and can last for years.
- **Distress**: Stress that an animal experiences and is unable to physiologically cope with.
- **Gait**: An animal’s stance; the way animals walk and how their feet and legs are positioned.
- **Guarding**: Protection of a certain affected area of the body as a way to minimize possible future pain.
- **Lethargy**: Abnormally slow, sluggish behavior.
- **Over-grooming**: A form of mutilation, in which an animal is attracted to and licks a specific area of his or her own body.
- **Pain Behavior**: Behavior that has been affected by the pain an animal is experiencing in an observable or noticeable way.
- **Panting**: Frequent, quick, short breaths that animals take that often indicate fatigue or heat; often used as a cooling method in dogs.
- **Posture**: An animal’s body position, or how animals hold their bodies when they are standing or sitting.
- **Restlessness**: Movement, frequent changes of position, and other abnormal activity during normal times of rest.
- **Self-biting**: A form of mutilation, in which an animal is attracted to and bites a specific area of his or her own body.
- **Vocalizations**: The different sounds and noises that an animal makes which are often used as a means of communication.

Life Skills Targeted

Sharing, concern for others, empathy, cooperation, communication, keeping records, planning/organizing, goal setting, critical thinking, problem solving, decision making, learning to learn, disease prevention, self-discipline, self-responsibility, teamwork, responsible citizenship, leadership

Next Generation Science Standards: Cross-Cutting Concepts Supported

- Cause and Effect – Mechanism and Prediction
- Stability and Change
- Systems and System Models
Activity 1: Observing Animal Behavior

Suggested Groupings:
• Groups of 4

Time Needed: 45 minutes

Materials Needed:
• Animal Behavior Cards* (Appendix 1A)
• Flip chart paper
• Key* (Appendix 1C)
• Markers
• Recording Sheets* (Appendix 1B)
• Writing utensils
*Materials provided.

Getting Ready
• Photocopy Recording Sheets (one per youth)
• Photocopy and cut out Behavior Cards (one card per youth)
• Photocopy Activity Key (one per group)
• Divide the youth into groups of four

Opening Questions/Prompts
1. Explain what the term “animal behavior” means to you. Ask the youth to record their thoughts on the flip chart paper provided. Ask the youth to also make a list of examples of animal behavior on the flip chart paper.
2. Explain why you think understanding an animal’s behavior is important. Ask the youth to record their ideas on the flip chart paper provided.
3. Share your thoughts on how an animal’s behavior could be affected by its health or well-being. Additionally, share any examples of situations where an animal’s behavior provided you clues about its health or well-being. Ask the youth to record their ideas on the flip chart paper provided.

Procedure (Experiencing)
1. Each group of four youth will receive two sets of animal behavior cards (Appendix 1A; e.g., Set 1A and Set 1B).
2. Within each group of four, have youth work in pairs. In each round of the activity, one pair of youth will act as the animals and one pair of youth will act as the veterinarians. Youth will have the opportunity to play both roles.
3. Provide each member of one pair (the animals) an animal behavior card from one of the sets (e.g., Set 1A or Set 1B). Both members of the pair must have a card from the same set. The youth should read their cards quietly and not discuss their cards with their group at this time.
4. The other members in each group of four will receive a veterinary recording sheet (Appendix 1B). These youth will be playing the role of a veterinarian in an animal shelter. Their job is to evaluate the health and well-being of the animals based on how the animals behave.
5. “Showtime”:
   a. Ask the pair of youth portraying animals to act out the information on their cards. They need to act out all of the behaviors included on their card while the other youth portraying the veterinarians observe.
   b. Each youth playing the role of the veterinarian should evaluate both animals in their group and write down their observations on the recording sheet provided.
      Note: During the observation period, the veterinarians can call the animal over to check for alertness or responsiveness, but the veterinarians are not allowed to touch the animals.
      Note: The observation period should last for 3 minutes.
6. Have the pairs switch roles and repeat steps 3-5.
7. At the conclusion of both rounds, have the pairs within each group compare their observation notes and discuss similarities and differences in their findings. They should also use their notes to make an inference as to which species their “animals” were portraying. (Key provided; Appendix 1C.)
8. Bring all youth together for a discussion. Use flip chart paper and markers to record responses.
9. Using the notes they collected ask the youth to develop a master list of types (categories) of behaviors they observed. Have the youth note similarities and differences between animals.
10. Write the name of each species that was observed performing each behavior listed.
11. Ask the group to classify each behavior based on the agreed-upon list.
12. Discuss what information, if any, the different behaviors provided about the health or well-being of the animals depicted in this activity. Ask the youth to record this on the flip chart paper provided.
Activity 1: Observing Animal Behavior (continued)

Sharing, Processing, and Generalizing
Follow the lines of thinking developed by the youth as they share and compare their thoughts, observations, and conclusions. If necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. Discuss what information was provided about the health and well-being of the animal based on the performance of each behavior on our list.
2. Discuss the similarities and differences between the behaviors performed by the different species.
3. Reflect on the benefits and challenges of using behavior to gather information about the health or well-being of animals.

Concept and Term Discovery/Introduction
At this point, volunteers need to ensure that the concepts and terms Acute Pain, Aggression, Anxiousness, Behavior Profile, Chronic Pain, Distress, Gait, Guarding, Lethargy, Over-grooming, Pain Behavior, Panting, Posture, Restlessness, Self-biting, Vocalizations have been introduced. (Note: The goal is to have the youth develop these concepts through their own exploration and define the terms using their own words.)
### APPENDIX 1A: Animal Cards

**Set A**  
**Animal 1:** You are a mammal with a skin condition that causes itchy, patchy sores in your fur. This causes you to spend a lot of time scratching and licking the affected areas (you can pretend to lick your skin). You are relatively friendly and are curious about the veterinarian, but do not want your sore areas to be touched and will growl if approached too closely. When you walk you hold your head up, but you have to keep stopping to scratch or lick your fur.

**Animal 2:** You are a mammal with a condition that causes you to be lethargic and move very slowly. You have bad posture so when you walk you have a hunched back. Along with lethargy, you are experiencing pain on your left side, which causes you to guard the painful area. When a veterinarian or another animal approaches you, you make sure to protect your left side to minimize the possibility of future pain. The pain does not cause you to make any abnormal vocalizations. You are not unfriendly but if the vet calls to you, you are not alert and do not respond immediately.

**Set B**  
**Animal 1:** You are a mammal with a condition that causes submissiveness and lethargy. When you walk, you keep your head up and exhibit good posture but you move very slowly and if a person or another animal approaches you, you avoid them. You are experiencing a vision problem and this causes you to squint your eyes all the time. You are also experiencing another condition that causes you to cough.

**Animal 2:** You are a mammal with a condition that causes you to repeat certain actions and movements (these are called stereotypies). You toss and nod your head repeatedly and you walk in circles repeatedly as well. When you walk, your feet point in because of a physical problem and your stride is very small, meaning you take very small steps. You are friendly and curious about the veterinarian so you are alert and respond when he/she calls out to you.
## APPENDIX 1A: Animal Cards

### Set C

**Animal 1:** You are a mammal that is experiencing pain in one of your left legs. This pain causes you to limp when you are walking and to move very slowly. You are alert and responsive to the vets but the pain you are experiencing causes you to make noises indicating pain. In addition to this noise, you often grind your teeth together.

**Animal 2:** You are a mammal with a condition that causes lethargy and depression. When you walk, your back is straight and your feet face straight forward but your movements are slow and sluggish and you stand apart from the other goats and veterinarians. When other goats approach you, you are not sociable and you move away. When veterinarians call to you, you are not alert and you do not respond to them. Additionally, you have another condition that causes you to cough a lot.

### Set D

**Animal 1:** You are a mammal that has a condition that causes pain in your right leg. This causes you to favor your left side over your right, so if a veterinarian or another animal approaches you, you keep your painful side away from them. You are alert and responsive when the veterinarian calls to you, but you make sure to guard your right side. You cannot seem to get comfortable because of your condition so you switch positions a lot and alternate standing up and sitting down frequently. Your condition does not affect your foot placement or posture, so you keep your head up while walking and your feet point straight forward.

**Animal 2:** You are a mammal that has a condition that causes you to be aggressive with the other animals and the veterinarian. Your aggressiveness causes you to charge at people and other animals but you do not touch them. This condition also causes you to often grind your teeth together. When you walk, your feet point in towards each other and you hunch your back. You alternate between walking around and resting.