



Call the Vet!

Animal Diseases

Grade Level

9-12

Lesson Length

3 periods x 55 Minutes

STEM Careers

- Animal Scientist, Animal Nutritionist, Veterinarian

Nebraska Science Standards

- SC12.3.1 (Structure and Function of Living Systems)

Next Generation Science Standards

- LS1.B (Growth and Development of Organisms)

Animal Biology Standards

- 4. (Recommend animal care practices and apply procedures to prevent diseases)

These lessons aim to bring the science, skills of inquiry, critical thinking, and problem solving to life through an agricultural context.



Learning Objectives

By the end of the unit, students should be able to:

- Identify components of animal living facilities to prevent diseases
- Name and identify diseases and parasites of concern
- Develop a sample animal disease scenario.

Materials List – (per student)

- One Copy of the presented scenarios
- Guided notes print out

Preparation

- Print Power Point slides or Guided Notes
- Print lab reports and Call the Vet! Guidelines
- Collect, organize, and prepare materials to be used for the disease diagnosis and scenario creation.



Introduction (Interest Approach)

Anonymously poll the class ...

- 1) Have you ever taken your sick pet/livestock to the vet? Yes or No
- 2) Was there a treatment available for your pet/livestock? Yes or No
- 3) Could the illness have been prevented? Yes or No

The following introduction may be conducted through usage of teams and small group discussion, as a whole class discussion, or through individual assignments or any combination thereof, per the instructor's discretion. Perhaps a "competition" (team or individual) could be established. For example, "You've got 2 minutes, jot down every possible way you could create a good living environment and prevent diseases and parasites in animals."

Essential Questions

- *How can you personally protect your animals from diseases and parasites?*
- *How does the federal government ensure animal drugs are safe for the consumer?*
- *Who is responsible for ensuring the safety of the food we consume?*

Learning Activity 1: Compare and Contrast Review

As a class, review previous day's discussion regarding animal health comparing and contrasting signs of a healthy or sick animal as well as housing situations and considerations.

- In pairs students create a Venn diagram comparing and contrasting signs of sick and healthy animals and address how those are impacted by living conditions.

Learning Activity 2: Gallery Notes

Distribute the "Animal Health" notes. Gallery notes around the room for each of the diseases and parasites highlighted to fill in guided notes.

Learning Activity 3:

Distribute "Call the Vet!" Scenario packet. In pairs students should work to ask questions to solve the scenario and determine what is wrong with the animal using textbooks and internet resources



Reflection

Using the animal scenarios, facilitate a reflective group discussion.

1. What approach did you take to make a diagnoses?
2. What precautions must a producer take after a treatment is administered?



Apply

Given what you have learned from Learning Activities 1-3, working in small pairs student should create their own animal health disease scenario. Including environmental conditions present and symptoms shown.

What environmental conditions did you create to cause the illness?
What information did you use to specify the symptoms displayed by your selected species?

References:

Agriscience Fundamentals and Applications 6th Edition
L. DeVere Burton

Call the Vet! Scenario Guidelines

Objective: Determine differences in animal environments and disease symptoms shown by animals to diagnose and treat each situation.

Guidelines:

1. Use provided resources and prior knowledge to 'diagnose' the animal in each situation.
2. A written plan of action must be submitted before research may begin. This plan should include a research problem, hypothesis, materials list, procedures, and data tables (if applicable).
3. Each student in the group will use the provided lab report to document their findings.
4. Each group will create their own scenario for others to solve.

Procedures:

1. After reading through each scenario, using what you already know, write a hypothesis and begin constructing your plan of action.
2. Once your plan of action has been approved, begin your evaluation to diagnose each situation.
3. Record the sources you use to diagnose the illness.
4. Analyze information retrieved and record your diagnoses on the form.
5. Address how each scenario could be treated and resolved.

Call the Vet! Scenarios

Name: _____

Date: _____

Scenario 1: Farmer Dan has a large herd of dairy cattle that are milked twice a day. Darla, his precious Holstein cow had her 4th calf last night. During the afternoon milking, Farmer Dan noticed that Darla had some swelling, and redness in her udder. When preparing to attach the milk machine to her, he observed her milk had a watery appearance. Farmer Dan is now concerned that Darla has come down with a case of something. How should Farmer Dan treat Bessie to help her overcome her illness?

Question: What disease/illness does the animal have? (#1)

Research:

What are the potential diseases?

How can you cross some out?

Hypothesis: Which disease do you think it is?

Analyze: (What made you decide on this disease? Symptoms?)

Report: (How you came to your conclusion, the treatments, cost, and potential outcome? How serious is this disease?)

Scenario 2: Summer, your fellow FFA member has a small swine project. Summer owns 5 sows, and each year she sells project pigs to your local chapter members. Two days ago, Summer's first sow farrowed and it was a long night. The piglets were rather large, and Summer had to assist with the delivery by pulling three of the piglets. The babies are doing well, but Summer has begun to worry about the sow. This sow has stopped eating, and there is a mild discharge from her vulva. She is also running a temperature. Summer believes the sow has an infection in her uterus. How can Summer be sure that this is the case? What course of action should Summer take to stop the infection?

Question: What disease/illness does the animal have?

Research:

What are the potential diseases?

How can you cross some out?

Hypothesis: Which disease do you think it is?

Analyze: (What made you decide on this disease? Symptoms?)

Report: (How you came to your conclusion, the treatments, cost, and potential outcome? How serious is this disease?)

Scenario 3: John is raising a lamb for the county fair. Two weeks before the fair, John notices that his lamb is limping. He evaluates the lamb and determines that it has swelling, cracks in its skin and is starting to produce a foul odor. What is wrong with John's lamb? How can he treat it in time to show the lamb at the county fair?

Question: What disease/illness does the animal have?

Research:

What are the potential diseases?

How can you cross some out?

Hypothesis: Which disease do you think it is?

Analyze: (What made you decide on this disease? Symptoms?)

Report: (How you came to your conclusion, the treatments, cost, and potential outcome? How serious is this disease?)

Scenario 4: Noah has a steer for the upcoming county fair. When he fed this morning he noticed the left eye of the steer was watering, he decided to check the steer more closely when he returns home in the evening. After school, Noah notices the steer's eye is worse. He can now see that it looks inflamed and appears to be causing the steer some pain. How should Noah treat the eye in this calf?

Question: What disease does the animal have? (#4)

Research:

What are the potential diseases?

How can you cross some out?

Hypothesis: Which disease do you think it is?

Analyze: (What made you decide on this disease? Symptoms?)

Report: (How you came to your conclusion, the treatments, cost, and potential outcome? How serious is this disease?)

Name:

Lab Report

Please complete the following report during the design and implementation of your experiment.

Research Problem:

Describe what you are investigating and justify why you are investigating the problem.

Hypothesis:

Formulate one or more hypotheses for your experiment.

Procedures:

Create the steps you will follow for your experiment.

Data Collection:

Describe the data that you will collect during your experiment.
Provide graphs, tables, charts, and raw data as necessary.

Results:

Explain your results.

Conclusion:

Based on your data:

What can you conclude?

Were your hypotheses supported?

Were their limitations to your experiment?

What are new research questions that derived from this study?