



# SCHOOL DISTRICT OF MONROE

*Preparing for the Future, One Child at a Time*

## Animal Nutritional and Management

### Course Description:

The curriculum for this elective course is developed from [Wisconsin Standards for Agriculture, Food and Natural Resources](#). Students who complete this course will have an advanced knowledge of production animals including the proper management techniques that are surrounding the industry. The course deals with classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals. The principles apply to all mammalian and avian species, but will be applied especially to swine, beef cattle, dairy cattle, poultry and horses. Hands-on lab activities will be included. The information in this course overview outlines what students should understand and be able to do by the end of the trimester.

### Mastery Standards:

Students will examine the components, historical development, global implications and future trends of the animal systems industry. (AS1)

Students will classify, evaluate, select and manage animals based on anatomical and physiological characteristics. (AS2)

Students will provide the proper health care of animals. (AS3)

Students will apply principles of animal nutrition to ensure the proper growth, development, reproduction and economic production of animals. (AS4)

Students will evaluate and select animals based on scientific principles of animal production. (AS5)

Unit	Description of Unit and Learning Targets
<p><b>Unit Title: 1. Careers in Animal Nutrition</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>What types of things should one consider when creating a balanced diet for an animal?</li> </ul>	<p>Students will.....</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Skill: Interact with classmates to explain and discuss the career opportunities in the field of animal nutrition.</li> <li>Content: Research and document career opportunities in the field of animal nutrition.</li> </ul>
<p><b>Unit Title: 2. Comparative Digestive Anatomy</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>Why is it important to be knowledgeable about animal digestive systems when raising and caring for animals?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Skill: Create the digestive tract of an avian, monogastric, pseudoruminant and ruminant digestive system through finger-painting.</li> <li>Content: Compare and contrast avian, monogastric, pseudoruminant and ruminant digestive systems.</li> </ul>
<p><b>Unit Title: 3. Monogastric Digestive System</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do monogastric animals digest their feed?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Skills: Label the parts and functions of the monogastric digestive system.</li> <li>Identify the parts and functions of monogastric digestive system anatomy.</li> <li>Content: Create an electronic presentation to demonstrate the analogy between a monogastric digestive system and an</li> </ul>

	amusement park.
<p><b>Unit Title: 4. Pseudo Ruminant Digestive System</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>Rabbits must ingest some of their own feces, a special type called cecotropes. Why do you think they need to do that?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Skill: Identify and label the parts of pseudo ruminant digestion.</li> <li>Describe the functions of the parts of the pseudo ruminant digestive system.</li> <li>Content: Create a pseudo ruminant or modified ruminant digestive system by using playdough®.</li> </ul>
<p><b>Unit Title: 5. Ruminant Digestive System</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>Why does a cow chew her cud?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Skill: Identify and label the parts of the ruminant digestive system.</li> <li>Identify the parts and functions of the ruminant digestive system.</li> <li>Content: Explain the steps in which food moves through the ruminant digestive system.</li> </ul>
<p><b>Unit Title: 6. Avian Digestive System</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>Why do chickens eat rocks?</li> <li>What body parts do humans have that serve a similar function in the avian digestive system? Explain your response.</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Skill: Construct a model of the avian digestive system.</li> <li>Content: Identify the parts of the avian digestive system.</li> <li>Describe the function of each part within the avian digestive system.</li> <li>Relate each part and function of a model avian digestive system to a real-life system.</li> </ul>
<p><b>Unit Title: 7. Caloric Requirements</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>Why do we balance rations for animals?</li> <li>Explain the importance of feeding an animal based on its age, size and purpose.</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Calculate MER (Maintenance Energy Requirement) and RER (Resting Energy Requirement) for an animal.</li> <li>Explain the importance of feeding an animal based on its age, size and purpose.</li> </ul>
<p><b>Unit Title: 8. Ration Composition</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>Why do we balance rations for animals?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Balance rations using the Pearson Square.</li> <li>Compare and contrast the nutritional requirements for livestock animals.</li> </ul>
<p><b>Unit Title: 9. Companion Animal Nutrition</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do companion animal nutritional requirements differ from livestock nutritional requirements?</li> <li>How are life stages different? <i>Would this be better?</i> Define the different life stages.</li> <li>Explain the importance of the nutritional requirements for animals</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>Identify the nutritional requirement based upon the life stage of an animal.</li> <li>Define the different life stages.</li> <li>Explain the importance of the nutritional requirements for animals with specific concerns, such as energy needs and/or disease.</li> </ul>

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<p><b>Unit Title: 10. Reading Feed Labels</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>● Proper feeding practices are very important to the success of a livestock program. How can owners determine what type of feed to choose?</li> <li>● What resources should they reference?</li> <li>● Explain how to reference feeding guidelines.</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>● Identify components of pet food labels.</li> <li>● Recall how ingredients are listed.</li> <li>● Explain the purpose of the Nutritional Adequacy Statement.</li> <li>● Explain how to reference feeding guidelines.</li> </ul>
<p><b>Unit Title: 11. What Defines Quality</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>● What type of ingredients would be preferred in a feline diet? Why?</li> <li>● Explain the ingredients listed on pet food labels.</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>● Define ingredients listed on pet food labels.</li> <li>● Calculate dry matter and nutrient percent in the dry matter of food.</li> <li>● Compare feeds and determine the quality of feed based upon percent of nutrients and ingredients. Defend your results.</li> <li>● Recall nutritional requirements for animals with specific concerns, such as energy requirements and/or disease.</li> </ul>