Course: Animal Science I

Unit: Animal Nutrition & Feeding

Unit Objectives:

A. List essential nutrients & their function
B. Identify factors effecting nutrition requirements in animals
C. Classify feed types and identify animal feeds
D. Compare & contrast common feeds according to species, age, and energy requirements
E. Interpret a feed label
F. Balance a ration

Interest Approach:

Divide the class into 8 groups. Give each group a sheet of paper with an animal species on it (Interest Approach Species Feed Cards. Print front and back so species is on the front and feed info is on the back. Print 1 set per class). Instruct each group to use the information on the paper to answer the questions. Tell the students to do their best and to use their background knowledge and the information listed on the sheet to answer the 2 questions. When their group is done, have them tape/pin their sheet at the front of the room. After about 10 minutes, review with the class what each group determined and discuss why understanding animal nutrition is important. Narrow the discussion to 3 main points (PowerPoint Slide #2). 1- Feed costs money (compare yearly feed costs), 2-some feeds or quantities of feed could kill or make an animal sick (horses will founder or colic, cattle bloats, etc with improper feed), 3- feeding/nutrition effects performance (no Grand Champion animal at a livestock show wins solely on genetics, performance horses need adequate nutrition for energy, etc).

Objective A: List essential nutrients & their function

• Use notes and PowerPoint slides to teach and illustrate objective

Objective B: Identify factors effecting nutrition requirements in animals

• Use notes and PowerPoint slides to teach and illustrate objective

• Activity: Rank Energy Requirements
  o Show PowerPoint slide #17.
  o Have students guess how many calories per day each horse requires and rank them from the HIGHEST caloric requirement, to the LOWEST.
  o (Tell them that the average high school student consumes 1500-2000 calories per day just to give them a reference point)
  o After students have had a chance to guess, show them the official ranking and caloric intake of each animal. Remind them that calories in our diets are converted to available energy.
Objective C: Classify feed types and identify animal feeds

- Introduce this objective by putting PowerPoint slide #19 on the board showing them the picture of the snickers bar and the broccoli. Ask a few students which item they would pick to eat. Then progress through each question that will come up one at a time: Which one would taste better? (Snickers) Which one would have the most calories? (Snickers) Which would fill your stomach if you intake equal amounts of calories? (Broccoli) After discussing these questions, tell students that when choosing animal feeds there are 3 types of feed that are used together to: 1- Fill the animal’s stomach so it’s satisfied, 2- Provide adequate nutrition (calories and nutrients)

- Use notes & PowerPoint to teach and illustrate objective

Activity: Feed ID

- Preparation: Gather zip loc bag samples of as many feeds as possible. Print the “Feed ID Info Labels” on cardstock and cut each label out. Place the corresponding ID label in the zip loc bag of the feed sample. Some feed samples have pictures that can be used for the ID.
- Pass out the “Feed ID / Minute-To-Win-It” worksheet. Take the feed samples and pass them out to the class. There is information on 20 samples of feed in the Feed ID folder, but adjust to fit the amount of samples you can provide. Each student or team of students (depending on class size) should have a feed sample.
- Instruct students to use the information on the feed sample label to categorize the feeds on their worksheet. For example, the Alfalfa Hay sample should be listed under the ‘roughage’ category for feed type, the ‘plant’ feed source, and ‘entire plant’ category for feed form.
- The goal of this section of the activity is for students to see common feeds and begin to understand their source. Establish a passing pattern through the classroom and pass the feeds every 1-2 minutes until every student has seen every sample.

Activity: Minute-To-Win-It

- Use the back of the “Feed ID” worksheet and PowerPoint slides 35-41 to play a review game.
- You may need to adjust the questions to fit the feed samples you provide!
- Divide the class into 2 teams and place all of the feed samples on the front table with the label face down.
- Instruct students that every challenge requires 3 team members to complete a task. Designate 1 student as the timer. If all 3 challenges are completed correctly within 1 minute, the team earns 1 point.
- Say “Go!” as you advance the PowerPoint so it lists the 3 challenges on the screen. 3 students from each team should jump up and complete the challenge.
- See correct answers in the notes for each slide
**Objective D:** Compare & contrast common feeds according to species, age, and energy requirements

- Introduce this objective by showing slide #42 of the dog food aisle at a store. Discuss that you can choose between several brands as well as numerous feed formulations within each brand. Use student’s prior knowledge to brainstorm how to choose an ideal diet.

- Use notes & PowerPoint to teach and illustrate objective

**Assignment:** Comparing Dog & Cat Foods
- Show the video clip “How it’s made: Dog & Cat Food”
- Pass out the worksheet and have students follow the directions to compare the differences between formulations of dog and cat foods.

**Objective E:** Interpret a feed label

- Use notes & PowerPoint to teach and illustrate objective

**Activity:** Feed Label Shuffle
- Preparation: Gather examples of feed labels or print the example feed labels provided.
- Note: Only print which labels you want. There are extras.
- Pass out all of the feed labels. Each student should have 1. Each student should also have a copy of the “Feed Label Shuffle” worksheet.
- Explain to the students that they are to record the name, crude fiber, protein content, type of feed (based on Crude Fiber content), and the first 3 ingredients of each feed on their worksheet.
- Establish a passing pattern and give students 1-2 minutes with each feed label to record the information.
- After 1-2 minutes, ring a bell or announce to the class to pass their label to the next student. Before starting the assignment, explain to the students that some feeds are medicated. Show them an example of a feed with medication and remind them that they should put a star by the feeds that are medicated.
- After the students have completed the shuffle, they should answer the 5 questions on the last page.

**Objective G:** Balance a ration

- Introduce this objective by asking 2 students to come to the board and list 1 days’ worth of food that would be a healthy diet. The list should include breakfast lunch and dinner. When the students are done, ask the class a series of questions: How many food groups does this list cover? Is there adequate calcium to maintain strong bones? Is there a good source of protein to build muscle and provide healthy growth? Is there fiber to keep the digestive system healthy? Tie it all together by defining the word “Ration” and then start into the notes.
• Use notes & PowerPoint to teach and illustrate objective

• **Assignment: Balancing Rations Using the Pearson’s Square**
  o Pass the worksheet out to students and allow them time to complete the worksheet.

• **Assignment: Calculating Rations**
  o Pass the worksheet out to students and allow them time to complete the worksheet.
  o After students have had adequate time to complete worksheet, go through the answers together.
    Ask for volunteers to put their calculations on the board. Answer questions as necessary

**Unit Review:**

**Unit Test**