

What's In My Food?

Expected Learning Outcomes

It is critically important that students have an understanding of supplemental foods required by swans. Assuring that swans have an appropriate and nutritious diet is critical to their health and quality of living. Students must be knowledgeable about strategies to prevent the haphazard and ignorant feeding of swans by untrained and occasional visitors to swan ponds. Students must also be able to chart and calculate nutrient requirements and feeding patterns to assure the swans healthful diets.

Materials

Provide students with samples of swan feed, writing and drawing instruments, paper, clipboards, charts, easels, and internet access.

Learning Strategies (K-8)

Discuss with students the fact that captive swans must be provided supplemental foods such as lettuce, bread, alfalfa, poultry, poultry layer pellets, and cracked corn. The poultry layer pellets and cracked corn can be purchased from farm supply stores and mixed in a half and half portion for placement into feeders. Poultry layer pellets and cracked corn both contain nutrients and micro-nutrients. A review of feed products from various mills was conducted to determine the average content of protein, fiber, fat, and micronutrients in each sample.

This review revealed the following contents in the feed products:

Poultry Layer Pellets

Crude Protein	16.3 %
Crude Fat	2.6 %
Crude Fiber	4.2 %
Calcium	3.9 %
Phosphorous	.35 %
Sodium	.02 %

Cracked Corn

Crude Protein	7 %
Crude Fat	1.5 %
Crude Fiber	25 %

Alfalfa Feeds

Crude Protein	16 %
Crude Fat	1.5 %
Crude Fiber	27 %

Related Activities

- 1. Discuss with students the basic food groups required in the healthy human diet. Write in manuscript print the names of each of these food groups on cards and place the cards on the Word Wall of the classroom.**
- 2. With the students, create a large pyramid on a 24"X36" chart. Discuss with the students the food content to be placed on each segment of the pyramid and the rationales for placing that food content on specific segments. Guide the students to place each food group card from the Word Wall on the appropriate segment on the Food Pyramid.**
- 3. Critique the values to human growth and development of constant observation of the principles of the Food Pyramid in homes and in schools. What important human needs are satisfied by committed adherence to the principles of the Food Pyramid?**
- 4. The students will draw and cut out pictures of foods that they believe swans might require to maintain a healthy diet which will provide for swan growth and development. The teachers and students will discuss the rationales for the selections and drawings of each of the swan foods. Based on explicit explanations of their swan food research, including the benefits and detriments of specific foods to swan growth and development, the teachers will guide the students to either accept or reject the drawings of each of the swan foods. The accepted foods will be placed on the Swan Food Pyramid. Labels for each of the foods will be written in manuscript print and placed beneath the drawings on the Swan Food Pyramid.**
- 5. Working in teams of two, the students will conduct research to compare their own protein, fat and fiber needs with those of swans. With the teachers' guidance, the students will present their findings in graphs. The students will write interpretations of their comparisons in brief paragraphs, an important early step in learning to conduct comparative research. These will be shared with the other teams of two.**
- 6. The student teams of two will conduct research studies of plants, trees, and grasses natural to the swans' venues. As a vital dimension of their research, the students will discuss with their teachers and colleagues the specific parts of the plants, trees, and grasses which can be used as food sources for insects, birds and animals. The students will draw the plants, trees, and grasses and label the parts of each which can be used as food sources. The students will summarize their research and drawings in a one-page report.**

7. Each team of two students will copy or bring into the classroom the nutritional information from cereal boxes, cookie packages, soup cans, etc. The students will analyze this information and prepare a two-column division of the nutrients which enhance growth and development and those which interfere. For example, high levels of sugar and sodium will be placed in the "interference" column, while protein and complex carbohydrates will be placed in the "enhancement" column.

Assessment

The teachers will construct a checklist to evaluate the students' responses to creation of the Food Pyramids, Graphs, Summaries of Findings, Placement of words from the Word Wall, Collaboration with Team Members, Quality of Presentations.

Learning Strategies (9-12)

It is critical that secondary students develop abilities to interpret the nutritional content of swan food products. They are the future swan keepers of the world. After careful research, including examination of the percentages of food nutrients listed above, students will graph and chart the nutritional differences within each swan food product. They will write a two-paragraph summary of the findings they reported in their graphs and charts and share these with their colleagues. Through conducting individual, team, and group research, they will acquire skills in determining ratio differences between and among the various food products available for swans. The secondary students will increase their cognizance of enhancing and detrimental foods and appropriate proportions/amounts in swan diets through careful observation and research. For example, a diet with too much protein might cause "angel wing" in all birds, including swans. As preparation for assuming greater responsibility for swan care and preservation, the secondary students will plan a daily/weekly/monthly diet for swans which provides a healthy balance of all nutrients. Such a diet will prevent illness and assure healthy growth and development.

Related Activities

1. The students will create a nutritional food chart for swans which will meet their nutritional needs but help to prevent "angel wing" and other illnesses which might lead to lethargic behaviors and serious illness.
2. Discuss the concept of angel wing in birds and why a diet with too much protein might cause this condition. Ask students to devise a nutritional food chart for the swans to meet their nutritional needs but help prevent angel wing.
3. The students will conduct a research study designed to determine the nutritional conditions in humans which are caused by having too much or

too little of a specific nutrient in the diet. For example, too little protein in the human diet can lead to an anemic condition. An overabundance of sodium can lead to heart problems. The students will report their research findings in the form of a paper with appropriate charts, graphs, drawings, interpretations, and recommendations.

4. The students will graph the Recommended Daily Allowance of Fiber, Fat, Protein, and Calcium in the human diet and compare these findings to the Fiber, Fat, Protein, and Calcium content in a swans' food products.

Assessment

The teachers will evaluate the students' research procedures and findings, written papers, oral reports/discussions, and graphs for accuracy and content.

