Make Your own Feed Sack

Recommended Grade Level: K-6

Approximate Length of Activity: One Class Period

Objectives:

Teacher:

1. Teach students about the nutritional value of pork to our bodies. (reference: Amazing pig DVD, Ag Mag, etc.)
2. Relate hog production to the students' lives by showing them how to make a feed sack with human food to represent how balanced and nutritious a pigs' meal is.
3. Create an understanding about the pork industry and production.

Students

1. Describe how hogs are raised.
2. Explain the nutritional value of pork and how it assists our bodies
3. Assemble a feed sack after learning about what hogs eat.

Introduction:

Pigs/hogs are fed a balanced diet so they grow healthy and strong to provide good food for us. We feed corn, soybean meal, vitamins, and minerals to pigs/hogs. Additives are also added to pig and hog feed to provide minerals and vitamins for the animals. This helps to increase growth and improve health.

Caring properly for pigs is a big job for farmers. Quality livestock is very important in producing valuable products that we all enjoy! Pork in our diet is important because it has high amounts of protein, B-vitamins, and thiamin. In fact, pork has three times as much thiamin as any other food. Thiamin changes carbohydrates into energy and promotes a normal appetite.

Materials Needed:

- Resealable plastic bags
- Measuring cups/spoons
- "Hog Feed Labels" sheet
- Blue candy (Ex: Jelly Bellies) *water**
- Cheerios *protein**
- Raisins *minerals**
- Corn Chex (or other cereal) *carbs**
- Chocolate Chips *vitamins**

**= Associates that candy with the ingredient used in pig*

feed Activity Outline:

1. Discuss hog production with your class.
2. Discuss the nutritional value of pork. What category is pork in on the Food Circle? How many daily servings are recommended from this group? (Can be found in "Build a Healthy Meal" packet)
3. Discuss what pigs/hogs eat from the information attached and provided in the introduction.
4. After the students study and discuss the "Hog Feed Label," they should follow the procedure listed below:

Procedure:

1. Give each student a resealable plastic bag and a copy of a "Hog Feed Label."
2. Each student will measure out each of the ingredients as follows:
    a. 10 grams of candy corn or oat cereal. This represents carbohydrates which provide energy for the pig.
    b. 6 blue candies which represents water.
    c. 5 grams of peanuts which represents protein that is necessary in a pig's diet- protein builds muscle.
    d. Measure 1 tbsp. of raisins which represents minerals- minerals ensure the animal is strong.
    e. 1 tbsp. of small candy which represents vitamins- vitamins help to make sure the animal stays healthy.
    f. Go over the discussion questions.

Discussion Questions:

1. How do farmers care for pigs?
2. What is the nutritional value of pork to our bodies?
3. What do pigs eat?
4. Do pigs grow better when they are fed a well-balanced diet or an unbalanced diet?
5. How are the pigs helpful to humans?

Feed Label Ingredients – Swine Nutrition

In general, nutrients are divided into five categories: Water, protein, carbohydrates, minerals, and vitamins. Except for water, which is largely supplied separately, nutrients are supplied to animals in the food materials we provide them (known as feedstuffs).

Water

Water is so common that we seldom think of it as a true nutrient, but it is the most essential and the cheapest of all nutrients. Water is the largest single component of a pig's body. It also passes through the body, transporting nutrients and removing wastes. Depriving pigs of water reduces feed consumption and limits growth and feed efficiency. Therefore, ample water should be provided continuously. A pig needs to drink two to three pounds of water for every pound of feed it eats.

Water is usually taken into the body at a lower temperature than the body itself, therefore, a portion of the body's heat or energy must be used in the warming of the water. In hot weather, this can be a comforting advantage, but in the winter, it can be a serious disadvantage. If the water is ice cold, the pig will drink less. Reduced water consumption will limit performance as significantly as a lack of any other nutrient.

It is important that you make certain your animals always have all the fresh, clean water they need and that it is relatively cool in the summer and warmer in the winter.

Protein

Proteins are composed of 20 simpler building blocks called amino acids, and it is actually the amino acids that are the essential nutrients. Pigs, in fact, do not specifically need protein, but rather require amino acids for the formation of muscle and other body proteins.

Ten of the amino acids are called essential, because these cannot be produced within the pig's body. The pig's growth or performance can be limited by a lack of even one of the essential amino acids, even if the other nine are adequately supplied. The ten essential amino acids that must be provided in swine diets are: lysine, threonine, tryptophan, methionine, cysteine, isoleucine, histidine, valine, arginine, and phenylalanine. Most cereal grains are limiting in lysine, threonine, tryptophan, and methionine. Therefore, when one evaluates feed ingredients, these amino acids are most important in determining protein quality.

Energy

Energy is technically not a nutrient, but is a result of metabolism of carbohydrates (starch) and fats that are in a pig's diet. Carbohydrates and fats are the main source of energy in the diet. They are the primary fuels that are used in maintaining body temperature and producing muscular movement. Energy must be provided in large amounts over what is needed for maintenance to achieve optimum growth and reproduction responses. Energy is needed in many chemical changes that occur within the body. Because energy is needed constantly by a growing pig, the body stores some energy in the form of fat. The major source of dietary energy for the growing pig is from the carbohydrate component of grains in their feed.

Minerals

Minerals are needed in body tissues and to assist in some of the body's chemical reactions. In particular, calcium, phosphorus, and salt (often referred to as macro-minerals) are major needs. Calcium is important in bone formation. Phosphorus is also involved in bone building and assists in energy utilization. Salt is important for maintaining good appetites and water consumption in hogs.

Other minerals are needed in small amounts and are called trace minerals (or micro-minerals). These include iron, copper, zinc, magnesium, manganese, iodine, and selenium.

Of all farm animals, the pig is the most likely to suffer from mineral deficiencies. This is due to the following:

1. Hogs are primarily fed cereal grains which are low in minerals (except calcium).
2. The skeleton of a pig, in contrast to those of other animals, supports greater weight in proportion to its size, which means it needs more mineral content than most animals.
3. Hogs do not consume great amounts of roughages, which would balance the mineral deficiencies of grain.
4. Hogs are fed to grow at a maximum rate and are marketed before they reach full maturity. Emphasis on rapid growth and lean meat production requires adequate mineral concentrations, yet under these conditions, minerals are often overlooked in diet formulations. Most minerals are supplied in purchased supplements.

Vitamins

Vitamins are compounds that assist the body in the assimilation and use of the other nutrients. They are described in two classes, fat soluble (A, D, E, K), and water soluble (the B vitamins). The body can keep reserves of the fat soluble vitamins for a time, but the water soluble vitamins must be supplied in the diet daily.

Fat Soluble Vitamins:

- Vitamin A (carotene) is found in feedstuffs like alfalfa and corn. Converted by the body from carotene, it assists in maintaining the surface or epithelial cells. Such cells make up the outer skin as well as the lining of the digestive and respiratory tracts.
- Vitamin D is in compounds that have been exposed to sunlight. Some Vitamin D is fixed in the animal itself during exposure to sunlight. This vitamin assists in the utilization of calcium.
- Vitamin E's function is for normal muscle activity and reproduction. It helps to prevent the membrane surrounding individual cells from deteriorating, influences the production of various hormones, and defends against infection.
- Vitamin K's function is to help calcium and Vitamin D metabolism. The blood requires Vitamin K to form clots.

Water Soluble Vitamins:

- These vitamins occur or are supplied as chemical compounds in feeds. They assist particularly in the changes of nutrients into energy for growth. They may also assist in maintaining the health and soundness of the lining of the digestive organs. This group is also called the B-complex group. The B Vitamins generally added to swine diets include thiamine, riboflavin, niacin, pantothenic acid, B12, and pyridoxine.

LINDNER

1100 BASE 20 -75

Base Mix for Mixing for Growing Swine.

GUARENTEED ANALYSIS

Crude Protein (Min)	30.00%
Lysine (Min)	3.10%
Crude Fat (Min)	3.85%
Crude Fiber (Max)	1.12%
Calcium (Min)	5.28%
Calcium (Min)	5.55%
Phosphorus (Min)	3.08%
Salt (Min)	2.46%
Salt (Max)	2.57%
Selenium (Min)	0.34 ppm
Zinc (Min)	3662 ppm

INGREDIENTS

Grain products, Plant protein products, Dried Whey, Fish Menhaden meal, Bloodmeal Spr dried, Yeast Culture, dicalcium phosphate, calcium carbonate, salt, Vitamin A supplement, Vitamin D3 supplement, Vitamin E supplement, thiamine, mononitrate, pyridoxine hydrochloride, D-Calcium pantothenate, niacin supplement, folic acid, riboflavin supplement, menadione sodium bisulfite complex, biotin, Choline chloride, zinc sulfate, manganese sulfate, copper sulfate, calcium iodate, ferrous sulfate, sodium selenite, mineral oil, and vitamin B12 supplement.

FEEDING DIRECTIONS

Mix as shown and feed as the sole ration to growing pigs.
This will make a ration containing approximately 20% crude protein.

200 lb. Base 20-75
500 lb. Soybean Meal 47.%
1060 lb. Ground Corn
200 lb. Whey
40 lb. Soybean Oil

MANUFACTURED BY

LINDNER FEED AND MILLING CO. INC.
Comfort, Texas 78013

NET WT 50LB (22.68 kg)

Make Your Own Feed Sack Labels

Illinois Pork Producers.
Generations of Commitment.

Pig Feed Sack

HOGS NEED:	REPRESENTED BY:
Water	Blue Jelly Bellies
Carbohydrates	Corn Chex
Protein	Cheerios
Minerals	Raisins
Vitamins	Chocolate Chips

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