

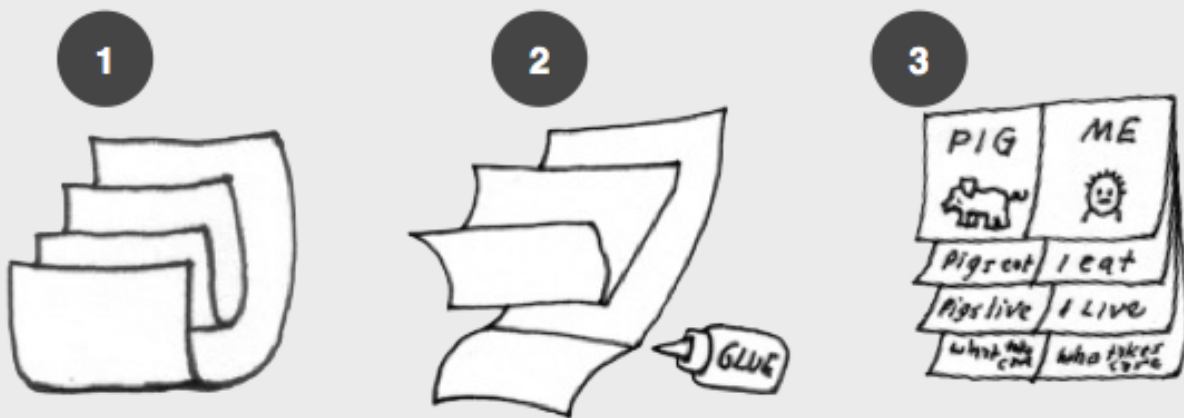
Ohio Science Academic Content Standards Grade 2: Life Science

- Characteristics and Structure of Life: Explain that animals, including people, need air, water, food, living space and shelter; plants need air, water, nutrients (e.g., minerals), living space and light to survive.
- Diversity and Interdependence of Life: Explain that food is a basic need of plants and animals (e.g., plants need sunlight to make food and to grow, animals eat plants and/or other animals for food, food chain) and is important because it is a source of energy (e.g., energy used to play, ride bicycles, read, etc).

Directions for a layered book (a Dinah Zike Foldable®)

A viewing guide will help students compare their primary needs to those of the pig. Use the following steps to create a layered book.

- Stack two sheets of paper, placing the back sheet one inch higher.
- Bring the bottom of both sheets upward and align the edges. All of the layers or tabs should be the same distance apart.
- Fold the papers and crease well.
- Open the papers and glue them together along the valley/center fold.



Recent research shows that nourishing food not only makes a child healthier, it improves school performance¹. Nutrition is an important part of every child’s education. Learning about personal nutrition can be connected to the study of Life Science and related careers.

ANIMALS AND PEOPLE NEED GOOD NUTRITION

Many children enjoy eating junk food like cookies, potato chips, and sweets. These foods tend to be high in calories and fat and low in protein, vitamins, and minerals. Currently about 15% American children ages 6 to 11 are obese; junk food adds to this problem. By learning about the importance of health and nutrition, children are able to make better choices about the food they eat.

¹ <http://www.sciencedaily.com/releases/2008/07/080707161429.htm>

The food pyramid shows the number of servings of each food group a child should consume a day. For children 4-8 years old, the FDA recommends eating 3–4 ounces of meat or beans a day. This food group includes lean pork, chicken, fish, or beef as well as nuts such as almonds, walnuts, and pecans. These foods are all high in protein, which the body uses to repair the body and build muscles.

Children should also eat 4–5 ounces of grains each day. One ounce of grain is equivalent to one slice of bread, a half cup of pasta or rice, and one cup of cereal. Add to this about 1.5 cups of vegetables and 1–1.5 cups of fruit each day. Dark green vegetables such as spinach, broccoli, and kale are high in vitamins and minerals. Fruit is high in fiber and vitamins. Juices, though made from fruit, are often high in sugar. Children 4-8 years old should have 1–2 cups of milk or other calcium-rich food such as yogurt, cheese, and calcium-fortified juices.

Fats and oils are an essential part of any balanced diet, but the FDA recommends eating foods in this category in moderation. Oils from fish and nuts as well as canola, olive, and soybean oils are healthier options.

Nutrition is also important to pork producers. Feed accounts for more than 65% of all production expenses². Animal Science nutrition experts create balanced diets in proper proportions for pigs at each stage of their lives. Corn and other grains provide energy in the form of carbohydrates. Soybean meal is the major source of protein, the building block of muscle and other organs. Vitamins and minerals, such as calcium and phosphorus, are also included. Producers work hard to ensure the survival of each pig. Newborn piglets need special attention because they are born with little stored energy and cannot regulate their own body temperature.

ACTIVITIES ABOUT NUTRITION

tion and pork protein: fun recipes, a scavenger hunt, and a way to get into the Pork Hall of Fame! pork4kids.com

Create a bulletin board called 'Junk Food Jail.' Check nutrition labels and add a food to the Junk Food Jail when the first two ingredients listed are sugar or fat. Sugars can be 'disguised' as sucrose, dextrose, honey, fructose, maltose, lactose, glucose, molasses, or corn syrup. Read the label carefully. Pigs don't eat 'slop' and neither should students!

2 <http://www.pork.org/newsandinformation/quickfacts/porkstory2.aspx>

CAREER CONNECTIONS

Family farms are commonplace in Ohio's pork production. In addition to the family workers, pork production facilities use the expertise of scientists and nutritionists. Pork producers take pride in providing the proper care for the swine on their farms. Animal welfare, animal health, food safety and the environment are some of the main factors pork producers consider. Using knowledge obtained from science and nutrition experts, producers have adopted and adapted techniques to ensure the well-being and performance of their animals.

NUTRITION SCIENTISTS

Nutrition scientists use the scientific method to study nutrients and share new knowledge related to nutrition. For example, nutrition scientists develop food preservation processes, determine nutrient requirements for various animal species, describe how individual nutrients function within the cells, and identify nutrition-related problems in various populations. Nutrition scientists may have their basic training in nutrition or in a related field such as biochemistry, microbiology, cell biology, epidemiology, toxicology, agriculture, or food science, chemistry.

Job description of an animal nutritionist

An animal nutritionist works to improve productivity, health and growth of agricultural, zoo and companion animals (pets) through better diet. Animal nutrition is a relatively new science that often combines chemistry, physics, biochemistry, maths, animal behavior, economics, food Processing and animal production techniques. Animal nutritionists often work directly with farmers or for a feed company. Typical activities may include:

- Researching and formulating diets to maximize growth, reproduction, health, and performance
- Monitoring feed formulations to meet quality performance and animal health standards
- Maintaining expertise in nutritional trends and regulatory changes to produce new products
- Using IT to formulate diets, conduct research and generate reports
- Balancing a growing consumer interest in food quality with the need to develop competitive agricultural systems

Related occupations for those interested in animal nutrition may include agricultural consultant/ adviser, agriculture research scientist, animal breeder, dietitian, farm manager, fish farm manager, nutritionist, plant breeder/geneticist, veterinary surgeon, or zookeeper.

For more detailed information and an Occupational Profile, visit prospects.ac.uk/downloads/occprofiles/profile_pdfs/S1_Animal_nutritionist.pdf

OCIS

Ohio's Career Information System: Junior Version has career videos and assessments. Most school districts have purchased a site license. Check with your local district's guidance office. **ocis.org/materials/versions.htm**