

Animal Science: People Pellets

Activity Series: Animal Science
Grade: 3-6
Time: 45 min

Objectives

- Investigate the ingredients found in pet food
- Design a nutrition-packed "people pellet"

Learning Standards

(See Matrix)

Common SET Abilities

4-H Projects address:

Predict
 Hypothesize
 Evaluate
 State a Problem
 Research Problem
 Test
 Problem Solve
 Design Solutions
 Develop Solutions
 Measure
 Collect Data
 Draw/Design
 Build/Construct
 Use tools
 Observe
 Communicate
 Organize
 Infer
 Question
 Plan Investigation
 Summarize
 Invent
 Interpret
 Categorize
 Model/Graph
 Troubleshoot
 Redesign
 Optimize
 Collaborate
 Compare

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Main Idea
 Pelleted pet foods need to meet all of the animal's nutritional requirements.

Motivator

Did you realize that when you feed your pet their pelleted food, they are getting almost all of their nutrient requirements in one bite?

Pre-Activity Question

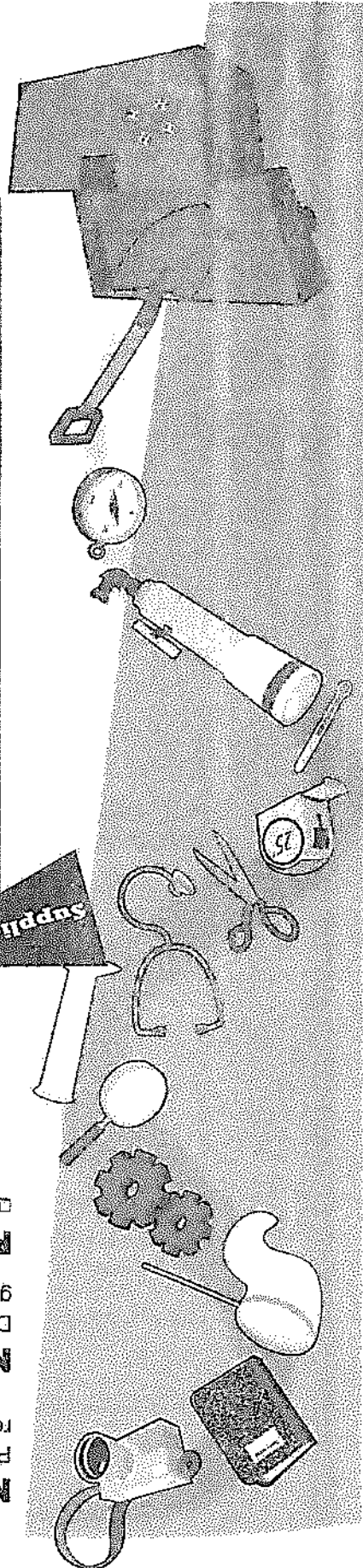
- What would a version of pelleted food look like for people?

Activity

- Samples of various types of pelleted pet food with nutritional label (choose gourmet offerings that contain "people food" like fruits and vegetables).
- Pre-made bingo cards with fruits and vegetables (make your own or use pre-fab)
- Scissors
- Rolling pins (one per group)
- Spoons
- Food service gloves
- Sandwich sized plastic bags that zip closed
- Grains: Pre-measured 1/2 cup bags of corn, rice and oat cereal - will need two bags of each grain per group
- Proteins: Bowls of powdered milk, soy nuts or sunflower seeds - will need two of each per group
- Energy: Squirt bottles of honey and maple syrup
- Flavors: Raisins and chopped dried apples
- Index cards labeled "Energy" "Protein"
- "Flavor" and "Grains" (one per group)
- Ingredient label from a human meal replacement bar or drink

Part I: Investigate!

- Have the students work in small teams. Give each team a bingo card, an unopened bag of pet food and a marker.
- Instruct the teams to read the label of the pet food and seek out the "people food" ingredients. (Note: You may need to help the students interpret some of the ingredients. Have them focus on the easy ones first.)
- Have them locate a picture of that food on their bingo card and "X" it with their marker.



4. If the teams do not get bingo with their own bag of food, have the groups rotate stations, leaving the food and marker. Each team will have a chance to use a new bag of food and marker. Continue to rotate until team gets bingo (or you run out of time.)
5. The team that gets the first bingo will be the first to select their ingredients in Part Three.

Part 2: Taste Test!

1. Before the group meets, prepare a trail mix from the cereals listed in the grain group above. Have the students sample it. (Be sure to check for food allergies first!)
2. Now place a small amount of the trail mix in a double plastic bag and let them roll it into powder. Ask the students if they think it will taste the same or different? Will the nutrition have changed? Let a few volunteers sample the powder.
3. Ask the group what would be the benefit in "powderizing" the food?
4. Show the group an energy bar and a pellet of pet food. Ask them what they have in common.

Part 3: Create!

1. Form new teams. Demonstrate the techniques below to make "people pellets":
2. Give each team one of each card: (protein, energy or grain)
3. Have each team shop for their grains. Each group gets a "free" bag of corn cereal plus whichever they select.
4. Have them "powderize" their cereal by rolling it out in two plastic bags.
5. Now have them shop for their protein, flavor and their energy.
6. Have the students add two spoons each of the protein and flavor to their bag with the cereal, zip it closed, and take turns mixing by shaking the bag.
7. Have an adult add the energy ingredient. Use your discretion on how much will be needed to make a dough. Have the students work the ingredients into a pellet shape. If needed, a small amount of water can be added as well.
8. Survey the group for taste testers. Have them taste only one bite and give their opinion on whether they would like to eat it every day for every meal!
9. Review the contents of each pellet and talk about the nutrition. Ask the group how many more ingredients they think they would need for their pellet to really meet all of their nutritional needs. Share a list of ingredients from a meal replacement drink or bar.

Science Checkup - Questions to ask to evaluate what was learned

- What nutrients or ingredients were in the pet food?
- What would be the benefit of making the ingredients into a powder?
- What challenges did you have with making your pellets?

Extensions

- Have each group use the nutrition labels from their pellet ingredients to make a chart of protein, fat and calories. Have the entire group rate the recipes as high energy, low fat, high protein etc.
- Have each team come up with a name and package label for their product.

Vocabulary

Protein: Any of a large group of nitrogenous organic compounds that are essential constituents of living cells; consist of polymers of amino acids; essential in the diet of animals for growth and for repair of tissues; can be obtained from meat, eggs, milk and legumes.

Carbohydrate: Any of a group of organic compounds that includes sugars, starches, celluloses and gums and serves as a major energy source in foods.

Fat: Organic compounds that are made up of carbon, hydrogen and oxygen. They are a source of energy in foods. Fats belong to a group of substances called lipids, and come in liquid or solid form. All fats are combinations of saturated and unsaturated fatty acids.

Nutrients: A chemical that an organism needs to live and grow or a substance used in an organism's metabolism which must be taken in from its environment. Essential *nutrients* - proteins, carbohydrates, fats and oils, minerals, vitamins and water.

Background Resources

- FDA information about pet food: <http://www.fda.gov/AnimalVeterinary/ResourcesforYou/ucm047111.htm>
- Product label ingredient samples: www.kaytee.com/products/animal/small-animals/small-animals.php?page=0
- "Small Animal Nutrition," by Sandie Agar, 2001

