



LIVING THINGS AND THEIR NEEDS

Food for Kids

Written by Nancy Moreno, Ph.D., Barbara Tharp, M.S., and Paula Cutler, B.A.

from *Living Things and Their Needs Teacher's Guide* and for *Tillena Lou's Day in the Sun*.

BioEdSM

Teacher Resources from the
Center for Educational Outreach at
Baylor College of Medicine

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The activities described in this book are intended for school-age children under direct supervision of adults. The authors, Baylor College of Medicine and the publisher cannot be responsible for any accidents or injuries that may result from conduct of the activities, from not specifically following directions, or from ignoring cautions contained in the text.

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Using Cooperative Groups

Cooperative learning is a systematic way for students to work together in groups of two to four. Quite often, early primary students need to have their own materials, but can work in groups to share ideas and to learn from one another. Through such interactions, students are more likely to take responsibility for their own learning. The use of cooperative groups provides necessary support for reluctant learners, models community settings where cooperation is necessary, and enables the teacher to conduct hands-on investigations in a more manageable environment.

Students wear job badges that describe their duties. Tasks are rotated within each group for different activities so that each student has an opportunity to experience all roles. Teachers even may want to make class charts to coordinate job assignments within groups.

Once a cooperative model for learning has been established in the classroom, students are able to conduct science activities in an organized and effective manner. All students are aware of their responsibilities and are able to contribute to successful group efforts.

Asks questions

- Asks others to help
- Asks others to help

fold here



Scientist Leader

Helps the leader

- Gets the materials and returns materials
- Gets the materials and returns materials

fold here



Materials Scientist

is finished when group

- Tells the teacher when group is finished
- Writes or draws results
- Writes or draws results

fold here



Scientist Recorder

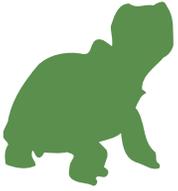
cleanup

- Follows the safety rules
- Directs the cleanup

fold here



Safety Scientist



My Science Journal

Name _____

Date _____

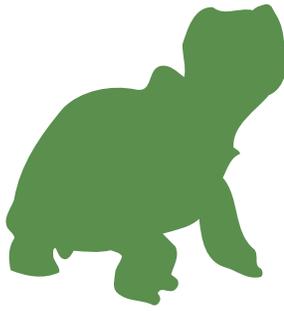
Project Name _____

DRAWING

**KEY WORD
TO USE**

I OBSERVED . . .





Food for Kids

Students will learn how cooking makes some foods easier to eat by observing uncooked popcorn and cooked popcorn. They also will make a snack (pudding) in class.

CONCEPTS

- Different animals eat different kinds of food.
- Unlike other animals, people often cook their food or combine several foods together.
- Cooking helps make some kinds of food easier to eat and to digest.

SKILLS

Science: Observing, sorting and classifying, predicting, generalizing, measuring

Mathematics: Observing, measuring

Language Arts: Listening, communicating, writing, using descriptive language, following directions

TIME

Set-up: 10 minutes for Part 1; 20 minutes for Part 2

Class: 30 minutes

MATERIALS

- 50 raw popcorn kernels
- Instant pudding, 3.2-oz pkg
- 1/2 cup of milk
- Clear plastic cup, 9 oz
- Package of microwave popcorn, plain (see Setup)
- Plastic teaspoon
- Tablespoon

Per group

- 4 clear plastic cups, 9 oz (prepared, see Setup)
- 4 plastic teaspoons
- 2 cups of milk
- Instant pudding, 3.2-oz pkg
- Paper towels
- Plastic tray
- Tablespoon

Per student

- Hand lens
- Copy of "My Science Journal" student sheet

All organisms that cannot trap and convert energy from the sun through photosynthesis must obtain the energy and other substances they need through food. Animals, fungi (mushrooms and their relatives) and many kinds of bacteria, for example, must eat plant parts, other animals or decaying plant or animal material. Living things that obtain energy from food are called consumers.

Not all animals have the same food requirements. People, for example, need to eat a variety of foods, including many different fruits and vegetables, to obtain all of the nutrients needed for growth and good health.

Important components of food are listed below.

- **Carbohydrates** are the body's main source of fuel. Starchy foods like breads, spaghetti, rice, potatoes, corn and cereals all are made up mostly of carbohydrates. Sugary foods like candy, jam and syrups also are carbohydrates. When possible, it is preferable to eat whole-grain breads and cereals, and to avoid sugary foods.
- **Fats** include butter, margarine, lard, shortening and cooking oil. Cheese, cream, chocolate, some meats and many desserts have a lot of fat. Fats are very concentrated sources of energy. Fats from animal sources, such as lard and butter, and fats that are solid at room temperature, generally are not as healthy as plant oils, such as olive, canola and nut oils.
- **Proteins** are important for the growth and repair of the body and muscles. Foods rich in protein include eggs, milk products, meat, dried beans, chicken, turkey and fish.
- **Minerals** are found in small amounts in food. They are needed for many body functions. Calcium, found in dairy products, is important for developing strong bones and teeth.
- **Vitamins** are other chemicals found naturally in food and are needed in small quantities by the body. Vitamin A, for example, helps maintain normal vision and healthy skin. It can come from dark green, leafy vegetables, and yellow and orange vegetables and fruits.

Unlike other animals, people combine ingredients and/or cook them to make their food better tasting or easier to digest.

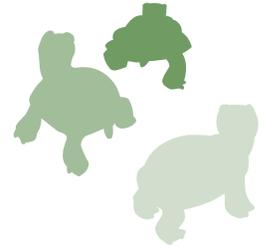
SETUP

Have students work in groups to complete activities. Assign a cooperative learning job to each student.

Part 1. Prepare the bag of microwave popcorn and allow it to cool. As an alternative, you may purchase a bag of prepared unflavored popcorn.

Part 2. Prepare a tray of materials for each group. Each tray will include





four 8-oz plastic cups—each containing 1/2 cup of milk; an opened package of dry pudding mix (any flavor); one tablespoon; four plastic spoons; and paper towels.

PROCEDURE

Part 1. Popcorn observations

1. Before students begin handling food, make a point of demonstrating how to wash hands with soap and water (see box below, “Hand Washing and Food Safety”). Have students wash their hands.
2. Prompt students to think about how they feel when they are hungry. Ask, *Do you ever feel hungry? What do you do when you feel hungry?* Discuss student responses.
3. Have students think about the types of food they eat. Help them identify the different kinds of foods available: breads and cereals; fruits; vegetables; milk and other dairy products; meats, fish, poultry and beans; fatty or oily foods; and sweets.
Have students name examples of each kind of food. Ask, *Do you eat this food raw? Why or why not?*
4. Open the uncooked bag of popcorn. Give each student a hand lens and a few kernels of unpopped popcorn to observe. Have students use as many senses as possible to observe the corn. They will be able to smell, see (without and with the magnifier), hear (the kernel makes sound when dropped on a surface), touch and, if permitted, taste (by touching the tongue to a piece of the kernel).
5. Direct students to write about or draw their observations in their a science journals.
6. Prompt students to consider why we need to cook some foods. Ask, *Do we eat uncooked popcorn? Would you like to eat this for a meal or a snack? Why or why not?* Ask students to predict what they think would happen if the popcorn was cooked.
7. Show students the prepared popcorn. Give each student a few pieces of the popcorn to observe. Again, have students use all of their senses to examine the new sample. Cut a kernel in half for them to observe. Have them record their observations as before.
8. Ask the class, *How did the popcorn change after it was cooked? Would you rather eat the uncooked or the cooked popcorn?*

HAND WASHING AND FOOD SAFETY

Follow these steps before preparing or eating food.

- Moisten hands with warm water.
- Apply soap and rub hands together for 20 seconds.
- Rinse thoroughly.

EXTENSION

Ask students, *What are other foods that are made of corn?* Possible answers are:

- Candy corn (corn syrup and coloring molded to look like a corn kernel)
- Corn bread (cornmeal mixed with eggs, milk, etc., and baked)
- Corn chips (fried tortillas)
- Corn chowder (soup made with corn, potatoes and milk)
- Corn meal (finely ground corn used as flour or cereal)
- Corn on the cob (cooked ears of corn with husks and silk removed)
- Corn tortillas (soaked and ground corn, mixed, flattened and baked)
- Creamed corn (fresh corn kernels cooked with milk)
- Grits (coarsely ground dried corn kernels or hominy)
- Hominy (soaked corn kernels with hulls removed)
- Hush puppies (fried, seasoned cornmeal)
- Succotash (fresh, boiled corn kernels and lima beans)
- Tamales (ground corn mixed with lard or butter, flavored and steamed in a corn husk)

Have examples of several of these foods and allow students to taste them. Emphasize that humans use this plant to make many foods that they eat (humans are consumers; plants are producers). Ask, *Do other animals prepare or cook their foods?*



EXTENSION

Use the recipe below to make cornstarch pudding without using a mix. Discuss with students the advantages and disadvantages of foods made from “scratch” (usually less expensive, take more time to prepare, often taste better, etc.). Discuss with students the list of ingredients printed on a box of instant pudding. Help them understand that the pudding mix already contains several different ingredients.

- Beat 2 eggs (well) in a mixing bowl.
- In a saucepan, mix 1/2 cup sugar, 6 tbsp of cornstarch and 1/4 tsp of salt. Once these ingredients are mixed, continue stirring and slowly add 4 cups of milk.
- Cook over low heat, stirring constantly, until mixture thickens (about 10 minutes).
- Remove about 1 cup of mixture and slowly incorporate it into the eggs in the mixing bowl.
- Pour the egg mixture into the saucepan and continue to cook for 2 minutes (stirring constantly). Remove the pan from the heat.
- When the pudding is slightly cool, mix in 1 tsp vanilla.

Be careful not to over cook the pudding. It will thicken more as it cools.

Cornstarch, the thickening ingredient in this recipe, is a fine flour made from the insides of corn kernels.

9. Help students understand that many foods must be cooked to make them easier to eat and digest. Ask students to think of other examples of foods that usually are cooked before they are eaten.

Part 2. Making pudding

1. Challenge students to think about how they eat different foods. Ask, *Do you always eat plain bread or milk? Do you ever mix one or more kinds of food together to make something that tastes good? How about pudding? What do you think it contains?*
2. Explain that students will make pudding and then eat it.
3. Remember to have students wash hands before touching food. Emphasize to students the importance of washing hands before handling food or eating.
4. Demonstrate to the class how to make the pudding. Measure two level tablespoons of pudding mix into 1/2 cup of milk. As you stir the mixture, advise the students to stir well, without sloshing, so that all of the dried mix is thoroughly combined with the milk. Show students how the mixture changed from a dry mixture in liquid to soft pudding.
5. Have Materials Scientists from each group pick up their tray of materials to make pudding.
6. Each student should make his or her own pudding. The students should take turns using the tablespoon to measure the dry pudding mix from its container. After all students have made their pudding, give them time to eat their snacks.
7. Discuss the ingredients in the snack students have made. Ask, *What did you mix together to make your snack? Did you end up with something that was different from the ingredients you started with? Can you think of any other foods that are made of mixtures?*

GRAINS

Corn kernels are examples of grains (which are seed-like fruits) produced by members of the grass family.

In some parts of the world, corn (which originated in the New World) is referred to as “maize,” from the Spanish word “maiz.”

Other grains that are important food sources around the world are rice, wheat, oats, barley and millet.

