In the Bag!

Families Sharing Science Together

Tracy J. Farrell and Patricia F. Thonney

Activities
A Cornell Cooperative Extension Publication

In the Bag!

Families Sharing Science Together

Explore Basic Tastes

Dear Family:

Welcome to *In the Bag!*, a program for families to learn about nutrition through science and reading. *Explore Basic Tastes* is one in a series of science bags that focus on food—what's in it, where it comes from, how it tastes and smells, what happens when you measure, mix, cook, and more.

As your family explores food, you will also experience the fun of science. Encourage your child's natural curiosity by asking questions: why, how, where, how much, and what would happen if? Your enthusiasm will promote learning about science.

Many children's books talk about food in fun and creative ways. Reading these books together can spark your child's interest in learning more about food. And taking time to read and talk together will help your child become a better reader.

Please return the "Talking Back" sheet to tell us how your family used this science bag. Your comments will help us make the bags more enjoyable for other families. Thanks and have fun!

What's *In the Bag?*

"Explore Basic Tastes" letter to families

The book *Bread and Jam for Frances*

➤ 8 cotton-tipped swabs

➤ "Talking Back" sheet

Reading and Talking about *Bread and Jam for Frances*

In the book *Bread and Jam for Frances* by Russell Hoban, Frances is a young badger who wants to eat bread and jam for every meal no matter what else is served. When her mother agrees to give Frances only bread and jam, Frances is surprised to learn that she really does enjoy other foods.

Before reading the book

Look at the cover together. You might ask:

- What do you think this book is about?
- Have you heard this story before? What do you remember about it?

As you read

Talk together about the book. You might discuss the following questions:

- What is one of your favorite foods? Why do you like it? Describe how it tastes, smells, and looks.
- Do you think Frances will be happy eating only bread and jam?

When you finish reading

Share some thoughts about the story:

- Why did Frances change her mind about bread and jam?
- Frances liked jam because it was sweet. What are some foods that taste sweet to you?
- What would you tell a friend about this book?

If you liked this book, see page 3 for other books you might enjoy.

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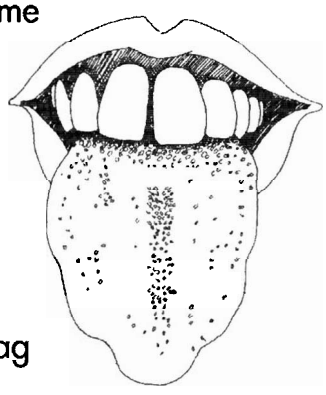
Science Activity 1. Sugar Is Sweet

Materials from home



- Mirror
- Paper and pencil
- Measuring cup
- Water
- Cup
- Teaspoon
- Table sugar

Materials in the bag

- Cotton-tipped swabs

In the book *Bread and Jam for Frances*, Frances's favorite food is bread and jam. One reason she likes jam is because it tastes sweet. Small bumps called taste buds on our tongues help us identify four basic tastes: sweet, salty, bitter, and sour. Different areas of the tongue are more sensitive to one basic taste than to the others. Try this activity to find the areas of your tongue most sensitive to sweet.

1. Look at your tongue in a mirror. Make a drawing that shows the shape of your tongue.
2. Measure 1/2 cup of water into a cup. Measure 1 teaspoon of sugar and stir it into the water.
3. Dip a clean swab in the sugar solution and touch it to different parts of your tongue (tip, back, and sides). Mark on your drawing the part of your tongue where the solution tastes sweet.
4. Have your partner try the same procedure. Compare your tongue maps. How are they the same and different?
5. If you wanted to enjoy a sweet-tasting apple, on what part of your tongue would you rub it?

Science Activity 2. Beyond Sweet Tastes

Materials from home

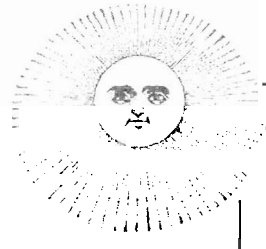
- Paper and pencil
- 4 cups
- Measuring cup
- Water
- Teaspoon
- Salt, instant coffee granules (or 4 teaspoons of cold brewed coffee), and vinegar or lemon juice

Materials in the bag

- Cotton-tipped swabs

As well as the basic sweet taste, tongues can distinguish three other basic tastes: salty, bitter, and sour. Try this activity to find areas of your tongue most sensitive to salty, bitter, and sour.

1. Make three drawings of your tongue as you did in Activity 1.
2. Label three of the cups "salty" (salt), "bitter" (coffee), and "sour" (vinegar). Pour 1/2 cup of water into each cup. Add 1 teaspoon of salt, coffee, or vinegar to the appropriate cup. Pour water into the fourth cup.
3. Follow steps 3 to 4 in Activity 1 for each tasting solution.
4. Look around your kitchen to identify other foods that are salty, sour, or bitter. Try tasting them on different areas of your tongue.



Warm and Cold

Does the temperature of a food affect its taste? Does apple juice taste the same when it is warm or cold? How could you find out?

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Cooking Connection

In the book *Bread and Jam for Frances*, Frances enjoys eating bread and jam. Frances would most likely enjoy jam with muffins as well as with bread.

Muffins

Ingredients

1 egg
1 cup skim milk
1/4 cup vegetable oil
2 cups all-purpose flour
1/4 cup sugar
1 tablespoon baking powder
1 teaspoon salt

Equipment

Muffin tin
Small mixing bowl
Large mixing spoon
Large mixing bowl

- Preheat oven to 400 degrees. Grease bottoms of muffin tin.
- In a small bowl, beat egg; stir in skim milk and vegetable oil.
- In a large bowl combine flour, sugar, baking powder, and salt.
- Make a well in the center of the dry ingredients and add egg mixture. Stir batter just until the dry ingredients are moistened (batter will be lumpy).
- Spoon batter in muffin cups, filling each about 2/3 full.
- Bake 15 to 18 minutes, until golden brown and firm to touch.

Makes 12 muffins

Exercise Connection

Jump Rope to a Frances Song

In the book *Bread and Jam for Frances*, Frances exercises by jumping rope while she sings little songs about jam. Try jumping rope to one of her songs.

Other Books You Might Enjoy

Chicken Soup with Rice by Maurice Sendak. New York: Harper Collins, 1992.
A young boy uses rhymes and pictures to explain why each month of the year is good for eating his favorite food—chicken soup with rice.

Eat Up Gemma by Sarah Hayes. New York: Lothrop, Lee, and Shepard, 1994.
Gemma is a toddler who throws food on the floor rather than eating it. Her big brother is a hero when he finds a funny way to interest Gemma in eating.

Green Eggs and Ham by Dr. Seuss. New York: Random House, 1987.
After much persuasion, Sam talks his friend into trying green eggs and ham. The friend is surprised to find that he likes this new food.

I Don't Like Peas by Marie Vinje. Grand Haven, Mich.: School Zone Publishing, 1992.
This is a rhyming story about a girl who dislikes eating peas. Finally, the girl's cat shows one thing that peas are good for. The simple text makes this a good book for beginning readers.

In the Bag!

Families Sharing Science Together

Explore Smell and Taste Together

Dear Family:

Welcome to *In the Bag!*, a program for families to learn about nutrition through science and reading. *Explore Smell and Taste Together* is one in a series of family science bags that focus on food—what's in it, where it comes from, how it tastes and smells, what happens when you measure, mix, cook, and more!

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What's *In the Bag?*

- "Explore Smell and Taste Together" letter to families
- The book *My Little Island*
- 8 fruit-flavored jelly beans
- ➤ "Talking Back" sheet

Reading and Talking About My Little Island

In the book *My Little Island* by Frané Lessac, two good friends visit the Caribbean island where one of them was born. Bright, detailed illustrations show the boys visiting family and friends, a marketplace and shops, the beach, a volcano, and even a carnival. Along the way they experience many smells and tastes, as well as sights and sounds.

Before reading this book

Look at the cover together. You might ask:

- What do you think this book is about?
- Have you ever heard this story before? What do you remember about it?

As you read

Talk together about the book. Some questions you might discuss:

- Have you ever tasted any of the foods mentioned in the book?
- What foods have you eaten that were cooked outside?
- What foods have you shared with a friend?

When you finish reading

Share some thoughts about the story:

- Tell about a trip you took. Describe something new that you saw, heard, smelled, or tasted.
- What would you tell a friend about this story?

If you liked this book, see page 3 for other books you might enjoy.

In the Bag!

Families Sharing Science Together

Science Activity 1. Sniff, Taste, and Tell

Materials from home

Paper and pencil
Cup of water

Materials in the bag

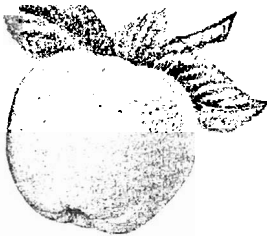
Fruit-flavored jelly beans

The book *My Little Island* describes the smells and tastes of many different foods. How food smells affects how it tastes because our senses of smell and taste work together. Taste buds on our tongues can identify four basic tastes: sweet, salty, bitter, and sour. Our noses do the rest. When we put food in our mouths, we also smell it. Try this activity to find out how your nose and tongue work together to help you detect many flavors.

1. First, fold a piece of paper in half. Label one half "taste" and the other half "taste and smell."
2. Close your eyes and hold your nose. Have a partner hand you one jelly bean. Take a bite of half the jelly bean. Chew it for about five seconds, then try to identify the flavor. (It's all right to say you don't know.) Your partner can record your guess and the correct answer. Save the other half of the jelly bean for step 4.
3. Repeat the process with the other flavors of jelly beans. Take sips of water between jelly beans to help clear away the last flavor.
4. Next, close your eyes but don't hold your nose. Repeat the tasting process with the other halves of the jelly beans. Your partner can record your guesses and the correct flavors.
5. Now it's your partner's turn to try tasting and smelling. Repeat steps 1 to 4. How well could each of you identify the different flavors using taste alone? How well using taste and smell together? Why doesn't food taste as good when your nose is stuffy?
6. When you finish, brush your teeth to remove any sugar left by the jelly beans.

Science Activity 2. More Taste and Smell

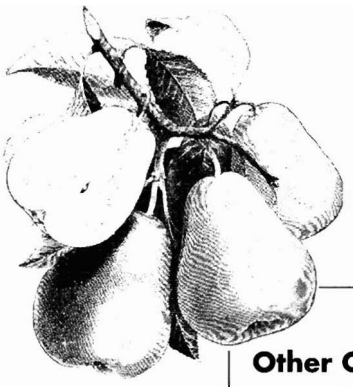
Materials from home



Paper and pencil
Small apple and potato or pear
Small knife
Food grater
2 plates
2 teaspoons

Try another activity to see how your sense of taste and smell work together.

1. Grate 2 or 3 spoonfuls of apple and potato or pear onto separate plates.
2. Follow the same steps for tasting as you did for Activity 1, tasting a spoonful of grated apple and potato or pear.
3. How well did you and your partner identify the foods using taste alone? How well did you do using taste and smell? Was it easier or more difficult to identify these foods than to identify the jelly beans?



Other Challenges

What other foods and flavors are difficult to identify using only your tongue, without your nose? You might try comparing white, chocolate, and strawberry milks. Look for other foods to compare.

In the Bag!

Families Sharing Science Together

Cooking Connection

Cinnamon is grown on the Caribbean island of Montserrat that is described in the book *My Little Island*. You can get a taste of the island with this simple snack.

Cinnamon Toast

Ingredients

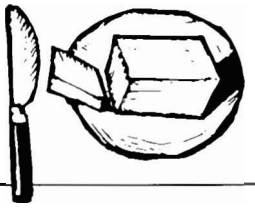
2 slices of bread
Margarine
Sugar
Cinnamon

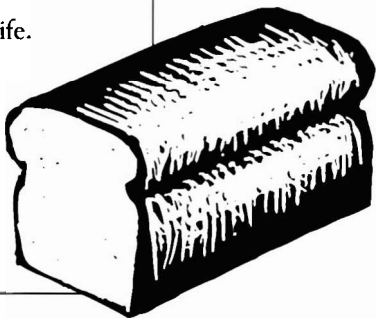
Equipment

Toaster
Plate
Table knife and spoon

- Toast the bread.
- When the toast is done, take it out of the toaster and put it on a plate.
- Spread margarine on the toast.
  Sprinkle sugar and cinnamon on the toast. Spread it with a knife.

Yield: 2 slices of cinnamon toast





Exercise Connection

Dance to the Music

In the book *My Little Island*, people enjoy dancing. Dancing is good exercise. Put on some lively music that you enjoy. Then get up and dance!

Other Books You Might Enjoy

Carnival by Denise Burden-Patmon. New York: Simon and Schuster, 1993.
Rosa is surprised and pleased to find out that her relatives in Brooklyn celebrate Carnival just as Rosa's family does back home in Trinidad—with special foods, music, costumes, and parades.

Everybody Cooks Rice by Norah Dooley. Minneapolis: Carolrhoda Books, 1992.
When Carrie's younger brother is late for dinner, Carrie goes to look for him. In her search, she visits several neighbors and finds that each of them is cooking a traditional rice dish for dinner.

Fiesta! by Beatriz Zapater. New York: Simon and Schuster, 1993.
The Mosquera family in Miami prepares for Fiesta, a time when people of the Hispanic community share traditional foods, music, dances, and contests.

How Pizza Came to Queens by Dayal Khalsa. New York: Crown, 1989.
Mrs. Pelligrino, a visitor from Italy, enjoys everything about her visit to New York except the lack of pizza. Finally, some thoughtful children help her make the first pizza in Queens, New York.

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Explore Sounds and Smells

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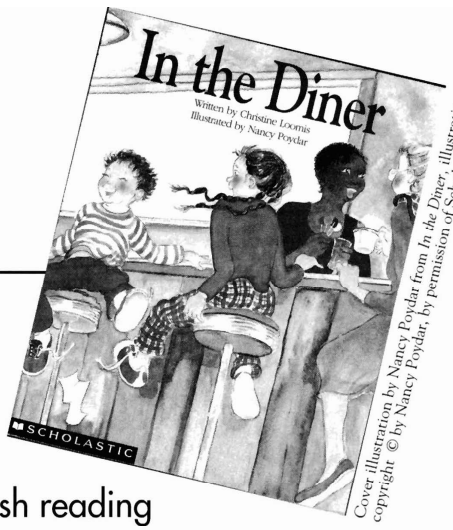
What's *In the Bag?*

- "Explore Sounds and Smells" letter to families
- The book *In the Diner*
- 4 empty film containers
- "Talking Back" sheet



Cover illustration by Nancy Poydar from *In the Diner*, illustrations copyright © by Nancy Poydar, by permission of Scholastic, Inc.

Reading and Talking about *In the Diner*

The book *In the Diner* by Christine Loomis takes you on a behind-the-scenes tour of a bustling, busy diner. The diner in this story is a sensory delight, full of sounds and smells as well as sights and tastes.

Before reading this book

Look at the cover. You might ask:

What do you think this book is about?

Have you ever heard this story before? What do you remember about it?

As you read

Talk together about the book. Some questions you might discuss:

- What foods are cooking in the diner that you like to eat?
- What foods in the diner do you eat at home?

When you finish reading

Share some thoughts about the story:

- Tell about a time when you ate in a diner or another restaurant. What did you order?
- Set up a pretend diner. Make a menu and take orders from "customers."
- What would you tell a friend about this story?

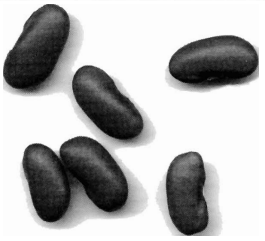
If you liked this book, see page 3 for other books you might enjoy.

In the Bag!

Families Sharing Science Together

Science Activity 1. Listen Up

Materials from home



Paper and pencil
Several different dry foods such as rice, beans, cereal

Materials in the bag

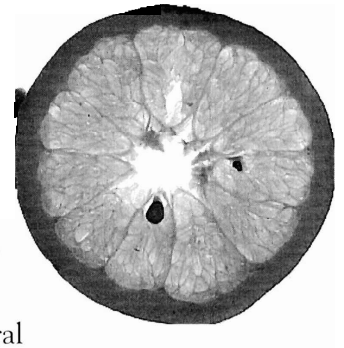
4 empty film containers

In the Diner describes many different sounds. Our sense of hearing is one of our tools for observation. Explore your sense of hearing by doing this activity.

1. Put a pinch of dry food in two empty film containers. Put a different dry food in the other containers. Place the tops on the containers and scramble them together.
2. Shake each of the four film containers and listen to the sounds. Try to match the pairs of containers that make the same sounds. Look inside to see if you matched them correctly.
3. Empty the film containers and add other foods to make pairs of different-sounding rattles. Challenge your partner to shake the containers and try to match the sounds.
4. As a variation, have your partner choose one food and add different amounts of it to each of the four containers. Shake the containers and try to line them up in order from the least to the most full. Look inside to check your predictions.

Science Activity 2. Your Nose Knows

Materials from home



Paper and pencil
Foods with distinctive smells

Materials in the bag

4 empty film containers

In the Diner describes several foods that have distinctive odors. Our sense of smell is one of our tools for making observations. Explore your sense of smell by doing this activity.

1. Look in your kitchen for foods that have distinctive odors such as cinnamon, peanut butter, banana, and chocolate. Choose four foods.
2. Put a small sample of each food in an empty film container. Have your partner open each container just enough to smell the foods (don't peek!). Which foods can your partner identify by smell alone?
3. Now, have your partner prepare containers for you to smell. Which foods can you identify by smell alone?
4. As a variation, choose two different foods. Put samples of each food in two containers. Challenge your partner to smell the foods and match the pairs. Then have your partner try it with you.
5. How easy was it for each of you to identify foods by smell alone?

What's Cooking?

The next time someone in your family is cooking, stand in another room where you can't see what's happening. Use only your ears and nose. Can you describe any sounds and smells? Can you tell what's cooking?

In the Bag!
Families Sharing Science Together

Cooking Connection

Often diners or restaurants make a special "soup of the day." Today's special soup is vegetable.

Soup of the Day: Vegetable

Ingredients

2 1/2 cups of broth (vegetable, chicken, or beef)
1 can (14 1/2 oz.) chopped tomatoes
1 package (10 oz.) frozen mixed vegetables
1/4 teaspoon onion powder
1/4 teaspoon garlic powder
1/4 teaspoon dried oregano

Equipment

Can opener
3-quart saucepan
Measuring spoons
Large stirring spoon

- Place all the ingredients in the saucepan.
- On a medium-high burner, bring the mixture to a boil.
- Reduce heat and simmer for about 10 minutes.

Makes 6 1-cup servings
Variation: Use chopped fresh vegetables instead of frozen. Add 1/2 cup uncooked elbow macaroni and simmer until tender.

Exercise Connection

Toss the Salad

"Toss the Salad" is played like the traditional children's game "Duck-Duck-Goose." One person is "It." Everyone else sits in a circle. "It" walks around the outside of the circle, tapping each person's head in turn and naming a food that might be in a salad—spinach, lettuce, chick peas, and so on. When "It" taps and says "toss it," the person who is tapped jumps up and chases "It." "It" tries to get back to the person's spot in the circle before being tagged. If "It" succeeds, the new person becomes "It."

Other Books You Might Enjoy

Frog Goes to Dinner by Mercer Mayer. New York: Dial, 1992.
What happens when a pet frog gets loose in a restaurant? There is plenty of action in this funny story without words.

Little Nino's Pizzeria by Karen Barbour. New York: Harcourt Brace, 1987.
Tony helps his father, Nino, work in their small family restaurant. Everything changes when the pizzeria becomes a large, famous restaurant.

Marge's Diner by Gail Gibbons. New York: Thomas Y. Crowell, 1989.
Everyone in town knows Marge and her twenty-four-hour diner. Follow Marge through a typical day as she orders, prepares, and serves food and cleans up in her diner.

My Father's Luncheonette by Melanie Greenberg. New York: Dutton Children's Books, 1991.
A little girl visits her father's old-fashioned luncheonette and helps out there.

In the Bag!

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Explore Seeds

Dear Family:

Welcome to *In the Bag!*, a program for families to learn about nutrition through science and reading. *Explore Seeds* is one in a series of family science bags that focus on food—what's in it, where it comes from, how it tastes and smells, what happens when you measure, mix, cook, and more!

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What's *In the Bag?*

- "Explore Seeds" letter to families
- The book *Cherries and Cherry Pits*
- ➤ A mixture of seeds in a zip-top plastic bag
- A magnifying lens
- "Talking Back" sheet

Cover illustration by Vera B. Williams from her book *Cherries and Cherry Pits*, copyright © by Vera B. Williams by permission of Greenwillow Books, a Division of William Morrow and Co., Inc.

Reading and Talking about *Cherries and Cherry Pits*

In the book *Cherries and Cherry Pits* by Vera B. Williams, a young girl named Bidemmi draws detailed pictures to tell stories about herself, her family, and people in her neighborhood. In each of her stories people eat cherries and remove the pits. But Bidemmi is the only one who makes a special plan for the cherry pits.

This book has several parts, and you may want to read it in more than one sitting.

Before reading the book

Look at the cover together. You might ask:

- What do you think this book is about?
- Have you ever heard this story before? What do you remember about it?

As you read

Talk together about the book. Some questions you might discuss:

- What could be in that little bag?
- Why do you think Bidemmi saves her cherry pits?
- What foods do you eat that have pits or seeds?

When you finish reading

Share some thoughts about the story:

- Which of Bidemmi's stories did you like best?
- What was the same about each of Bidemmi's stories? What was different?
- What would you tell a friend about this story?

If you liked this book, see page 3 for other books you might enjoy.

In the Bag!

Families Sharing Science Together

Science Activity 1. Sort and Separate

Materials from home

Paper and pencil

Materials in the bag

Mixture of seeds
Magnifying lens

In the book *Cherries and Cherry Pits*, Bidemmi and other people in her stories eat cherries. Like all fruits, cherries come from plants and contain seeds or pits. Many foods that we call "vegetables," including tomatoes, peppers, and squashes, are classified by scientists as fruits because they contain seeds. Grains such as rice, wheat, and oats also come from seeds of plants. Seeds can be different sizes, shapes, and colors. Examine some seeds to find out how they are the same and different.

1. Take the mixture of seeds out of the bag. Feel the seeds and look at them with the magnifying lens. Talk about how they are the same and different.
3. Sort the seeds into two groups. How are seeds in each group alike?
4. Sort the seeds into two groups in a different way. How are seeds in one group different from seeds in the other group?
5. Can your partner sort the seeds into groups in any other ways?

Science Activity 2. Kitchen Detective

Materials from home

Paper and pencil
A variety of foods
Ruler

Some foods that we eat (such as popcorn or some seasonings) are seeds. Other foods have seeds that we eat (like green beans) or seeds that we don't eat (like apples). What seeds can you find in your kitchen?

1. Think about foods in your kitchen. Which foods are seeds or have seeds? Try to predict and list any foods that have seeds or are seeds.
2. Now, with your partner, search in your kitchen for foods that are seeds or that have seeds.
3. Write down the names of any seeds that you find.
4. Which seeds do you eat? Which seed is the largest? Which is the smallest? What different colors are the seeds? How are the seeds similar? How are they different?
5. Use a ruler to draw a 1-inch line on a piece of paper. Choose one kind of seed and estimate how many will fit on the line. Check your estimation. How do different seeds compare?

Count the Seeds

Next time, before you eat a piece of fruit such as an apple or pear, try to predict how many seeds you will find inside. Count the seeds and check. Do all apples have the same number of seeds? Do all pears? What can you conclude about the number of seeds?

Collect Seeds Outside

What kinds of seeds can you find outside? Look around your neighborhood and collect as many different seeds as you can. Use an empty egg carton to sort and display your seeds.

In the Bag!

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Cooking Connection

Before you start, try to predict the answers to the following questions. As you work, compare your observations with your predictions.

- Where in each fruit are the seeds located?
- Which fruit has the largest seed(s)? Which has the smallest seed(s)?
- Which fruit has the most seeds? Which has the fewest? Did any fruits not have seeds?

Fruit Salad

Ingredients

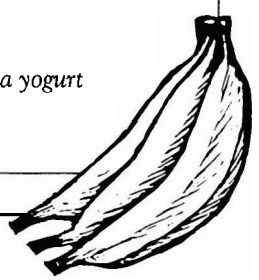
1 apple
1 peach
1 orange
1 banana
3 tablespoons frozen lemonade concentrate

Equipment

Small knife (a plastic serrated knife works well)
Cutting board
Large bowl
Mixing spoon

- Wash the apple and peach. Cut them into pieces and put the pieces in the bowl.
- Peel the banana and cut it into slices. Place the slices in the bowl.
- Peel the orange and separate the sections. Place the sections in the bowl.
- Add the lemonade concentrate and stir it with the fruit.

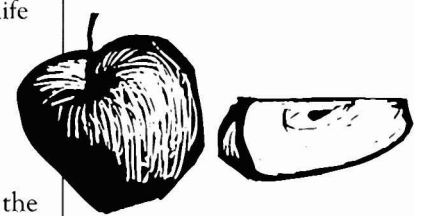
Makes 3 or 4 servings
Variations: Select different fruits. Mix fruits with low-fat vanilla yogurt instead of lemonade.



Exercise Connection

Jump and Run

In the book *Cherries and Cherry Pits* the boy who looks like Bidemmi's brother runs, jumps, and leaps on his way home from the train station. Running and jumping is good exercise. Look at the pictures of the boy. Then try to run and jump in the same way he does. How far can you jump when you are standing still? How far when you are running?



Other Books You Might Enjoy

Eating the Alphabet—Fruits and Vegetables from A to Z by Lois Ehlert. New York: Harcourt Brace Jovanovich, 1989.
From apples to zucchini, this book tells about a wide variety of fruits and vegetables. A glossary describes each food's origins, uses, appearances, and tastes.

Fruit by Gallimard Jeunesse and Pascale de Bourgoing. New York: Scholastic, 1991.
Transparent pages allow readers to get an outside view of a fruit and then turn the page to see inside.

The Seasons of Arnold's Apple Tree by Gail Gibbons. New York: Harcourt Brace Jovanovich, 1988.
Throughout the year, a young boy enjoys playing in and around his apple tree and watching how it changes with the seasons.

In the Bag!

Families Sharing Science Together

Explore Seeds to Plants

Dear Family:

Welcome to *In the Bag!*, a program for families to learn about nutrition through science and reading. *Explore Seeds to Plants* is one in a series of family science bags that focus on food—what's in it, where it comes from, how it tastes and smells, what happens when you measure, mix, pour, cook, and more!

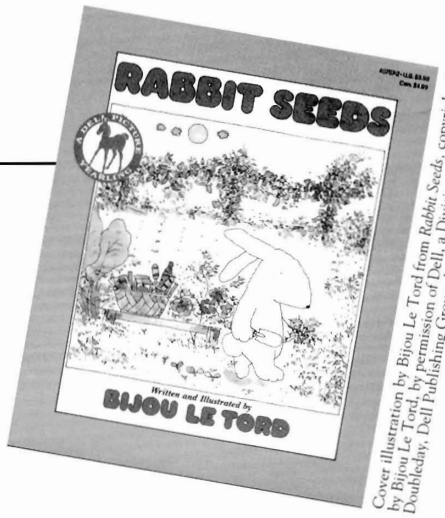
As your family explores food, you will also experience the fun of science. Encourage your child's natural curiosity by asking questions: why, how, where, how much, and what would happen if? Your enthusiasm will promote science learning.

Many children's books talk about food in fun and creative ways. Reading these books together can spark your child's interest in learning more about food. And taking time to read and talk together will help your child become a better reader.

Please return the "Talking Back" sheet to tell us how your family used this science bag. Thanks and have fun!

What's *In the Bag?*

- "Explore Seeds to Plants" letter to families
- The book *Rabbit Seeds*
- Kidney bean seeds in zip-lock plastic bag
- A magnifying lens
- "Talking Back" sheet



Cover illustration by Bijou Le Tord from *Rabbit Seeds*, copyright © by Bijou Le Tord, by permission of Dell, a Division of Bantam, Doubleday, Dell Publishing Group, Inc.

Reading and Talking about *Rabbit Seeds*

In the book *Rabbit Seeds* by Bijou Le Tord, a rabbit is a gardener who works hard through the year to plan, plant, care for, harvest, and clean up his vegetable garden.

Before reading the book

Look at the cover together. You might ask:

- What do you think this book is about?
- Have you ever heard this story before? What do you remember about it?

As you read

Talk together about the book. Some questions you might discuss:

- Tell about any foods that you have grown or have seen growing.
- What vegetables does the rabbit grow that you like to eat?
- Can you predict what the rabbit will do next?

When you finish reading

Share some thoughts about the story:

- Tell the rabbit's story again in your own words.
- Think of some familiar vegetables. What colors are they? What shapes?
- Draw pictures of some vegetables that you might like to grow.
- What would you tell a friend about this story?

If you liked this book, see page 3 for other books you might enjoy.

In the Bag!

Families Sharing Science Together

Science Activity 1. Looking Inside

Materials from home

Paper and pencil
Cup of water

Materials in the bag

Bean seeds
Magnifying lens

The rabbit in the story plants seeds that grow into plants. What is inside a seed that starts growing? You can find out what the inside of a seed looks like. Bean seeds are used for this activity because they are large and easy to handle.

1. Take three bean seeds out of the bag and observe them carefully. How do they look, feel, and smell? On a piece of paper, trace around one seed.
2. Put two of the seeds in a cup of warm water. Let them soak for 10 to 15 minutes, or until they are swollen and the outside seed coats are loose.
3. Take the seeds out of the water and look at them carefully. How do they look, feel, and smell? Trace around one of them. Compare a soaked and a dry bean. How are they alike and different?
4. You and your partner can use your fingers to peel off the seed coats and open the seeds. Look at the inside of the seeds with the magnifying lens. Describe and draw what you see. Compare the two beans. How are they alike and different?
5. How do other seeds look on the inside? Are all seeds like beans? Find some seeds and test your ideas.

Growing Bean Plants

Find out more about growing bean plants. Transfer any of the bean seeds used in Activity 2 to small pots or cups of potting soil. Water the soil and place the pots in a sunny window. Water the soil whenever it feels dry. Observe the pots over several weeks. Measure the plants as they grow.

Science Activity 2. Starting Seeds

Materials from home

Paper and pencil
Water
4 paper towels, napkins, or tissues
4 plastic bags or 4 cups

Materials in the bag

8 bean seeds

The rabbit in the book plants all kinds of seeds that grow into vegetables. What do seeds need to begin growing? Try this activity to find out.

1. Take 8 bean seeds out of the bag.
2. Wet two paper towels and squeeze out the extra water. Place each towel in a small plastic bag. Or you can use cups instead of plastic bags.
3. Place a dry paper towel in each of the other two plastic bags.
4. Set two bean seeds on the paper towel in each of the four bags. Leave the tops of the bags open.
5. Place one bag with a damp towel and one bag with a dry towel in a cold place such as in a refrigerator.
6. Place one bag with a damp towel and one bag with a dry towel in a warm place such as near a radiator, in a sunny window, or on top of the refrigerator or dryer.
7. Predict what will happen to the seeds during one week. Observe the seeds several times. At the end of one week, describe what happened to each pair of seeds. Draw pictures to show how the seeds in each bag looked the same or different from how they looked the first day.
8. Based on your observations, describe what conditions you think seeds need to start growing.

In the Bag!

Families Sharing Science Together

Cooking Connection

The rabbit in *Rabbit Seeds* would enjoy this salad.

Gardener's Salad

Ingredients	Equipment
5 or 6 lettuce leaves	Large bowl
1/2 small cucumber	Vegetable peeler
1 carrot	Paring knife
1/2 stalk celery	Spoon
1/2 red or green pepper	
1 small tomato	
Salad dressing	

- Wash the lettuce and shake it dry. Tear it into small pieces and place it in the bowl.
- Peel the cucumber and carrot and cut each into slices. Add the slices to the bowl.
- Wash the celery, green pepper, and tomato. Cut each into pieces and add them to the bowl.
- Add a small amount of salad dressing and mix all the salad ingredients together.

Yield: 4–8 servings. Variations: A gardener's salad can be as imaginative as you are. You can choose any combination of ingredients to substitute or add to the ingredients listed above. Some possible choices might be onion, chick peas (garbanzo beans), bean sprouts, mushrooms, cooked corn kernels, red cabbage, and cheese.

Exercise Connection

Rabbit Says

This game is played like "Simon Says." One person is "Rabbit." Rabbit stands in front of the other players and gives gardening directions for them to act out. Players should only follow the directions that begin with "Rabbit says, " as in "Rabbit says hoe the garden," or "Rabbit says dig potatoes." Players should not follow such directions as "Pick peas" or "Plant pumpkin seeds." Players caught following the wrong directions must sit down. The last player standing becomes the new Rabbit.

Other Books You Might Enjoy

The Carrot Seed by Ruth Krauss. New York: Harper & Row, 1945.
A little boy plants a carrot seed. Even though everyone tells him, "It won't come up," he cares for it until it grows into a large carrot.

A Garden for a Groundhog by Lorna Balian. Nashville: Humbug Books, 1985.
A humorous tale describes Mr. and Mrs. O'Leary's schemes to keep a groundhog out of their garden.

The Giant Vegetable Garden by Nadine Westcott. Boston: Little, Brown, 1981.
The people in the village of Peapack set out to win a prize for growing the best vegetables. But the plan backfires when the vegetables grow so large that they threaten to overrun the village.

Growing Vegetable Soup by Lois Ehlert. New York: Harcourt Brace Jovanovich, 1987.
An out-of-view child and father plant, tend, and harvest vegetables to make soup. The book includes a recipe for vegetable soup.

Pumpkin, Pumpkin by Jeanne Titherington. New York: William Morrow, 1986.
A young boy named Jamie plants a pumpkin seed and watches as it grows into a vine with giant pumpkins.

In the Bag!

Families Sharing Science Together

Explore Popcorn

Dear Family:

Welcome to *In the Bag!*, a program for families to learn about nutrition through science and reading. *Explore Popcorn* is one in a series of family science bags that focus on food—what's in it, where it comes from, how it tastes and smells, what happens when you measure, mix, cook, and more!

As your family explores food, you will also experience the fun of science. Encourage your child's natural curiosity by asking questions: why, how, where, how much, and what would happen if? Your enthusiasm will promote science learning.

Many children's books talk about food in fun and creative ways. Reading these books together can spark your child's interest in learning more about food. And taking time to read and talk together will help your child become a better reader.

Please return the "Talking Back" sheet to tell us how your family used this science bag. Thanks and have fun!

What's *In the Bag?*

- ➤ "Explore Popcorn" letter to families
- ➤ *The Popcorn Book*

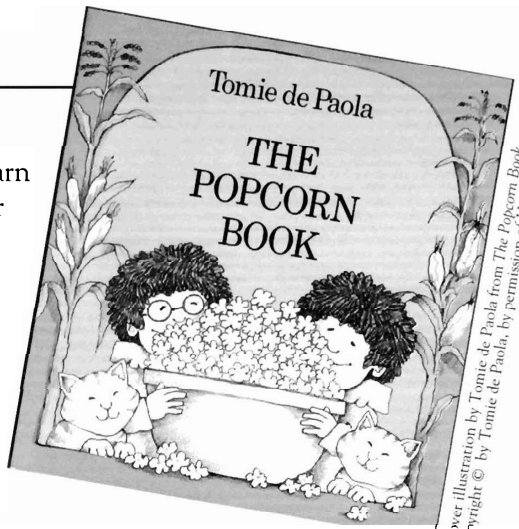
1/4 cup unpopped popcorn kernels in a zip-top plastic bag

A magnifying lens

"Talking Back" sheet

Reading and Talking about *The Popcorn Book*

In *The Popcorn Book* by Tomie de Paola, twin brothers will help you learn all about popcorn. While one brother cooks popcorn, the other brother reads about it in the encyclopedia.



Cover illustration by Tomie de Paola from *The Popcorn Book*, copyright © by Tomie de Paola, by permission of Holiday House.

Before reading the book

Look at the cover together. You might ask:

- What do you think this book is about?
- Have you ever heard this story before? What do you remember about it?

As you read

Talk together about the book. Some questions you might discuss:

- Tell about a time when you ate popcorn.
- After the oil is hot, how many more kernels would you add to the pan?

  How would a blizzard of snow differ from a blizzard of popcorn?

When you finish reading

Share some thoughts about the story:

- What surprised you about the story?
- What would you tell a friend about this story?

If you liked this book, see page 3 for other books you might enjoy.

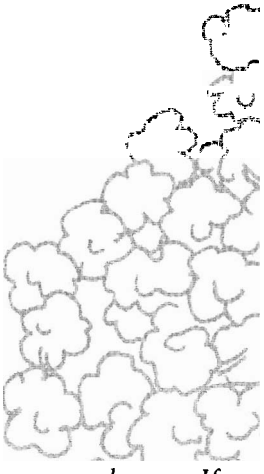
In the Bag!

Families Sharing Science Together

Science Activity 1. Popcorn Explosion

Materials from home

Paper and pencil
Tablespoon
Vegetable oil
Covered saucepan
Measuring cup
Stove burner
Bowl



Materials in the bag

Popcorn kernels

Directions are for making popcorn on a stove burner. If you use an electric popcorn popper instead, follow the manufacturer's directions.

Popcorn kernels are the seeds of corn plants. In *The Popcorn Book*, twin brothers pop popcorn and observe how it changes. You can pop popcorn yourself to find out how it changes.

1. Measure 1 tablespoon of vegetable oil into a saucepan with a tight-fitting lid.
2. Measure 1/4 cup of popcorn. Count the number of kernels. Predict how many quarter cupfuls of popped corn there will be after the popcorn pops.
3. Add the popcorn kernels to the pan. Cover the pan and cook on the stove burner over medium-high heat. Shake the pan gently and listen to the popcorn pop.
4. When the popping stops, remove the pan and turn off the burner. Carefully pour the popcorn into a bowl. Use the measuring cup to measure the amount of popped popcorn. How many quarter cupfuls are there? How much change did you observe?
5. How many kernels popped? How many kernels did not pop? Describe how the kernels changed when they popped.
6. Save at least ten pieces of popcorn for the next activity.

Science Activity 2. Find Your Kernel

Scientists carefully observe things to find out how they are the same and different. You can test your powers of observation by using pieces of popcorn.

1. Put five pieces of popped popcorn in front of you and five pieces in front of your partner.
2. Each of you should choose one popcorn piece. Use your eyes and hands to examine it. Take turns describing it. Tell about its color and shape. How is each piece different from the other four pieces?
3. After you have each examined one piece closely, close your eyes and mix it with the other four pieces.
4. Open your eyes and try to find your piece of popcorn. If it was easy, describe features that helped you find it. If you had trouble finding the special piece, describe why.
5. Try this same activity with other foods such as raisins, peanuts, or pieces of dry cereal.

Dry It Out

In *The Popcorn Book*, the brothers learn that moisture in the popcorn kernels helps it to pop. What happens if you try to pop dried kernels? Count out the same number of popcorn kernels as you popped in Activity 1. Dry the kernels on a baking sheet in an oven at 200 degrees for about an hour. Remove the dried kernels from the oven and pop them as in Activity 1. How does the dried popcorn compare to the fresh popcorn in Activity 1? Describe any differences.

In the Bag!

Families Sharing Science Together

Cooking Connection

Surprise Popcorn

Ingredients

1/2 cup popcorn kernels
1 tablespoon vegetable oil
Selected toppings:
Parmesan cheese, garlic powder, taco seasoning mix, dill weed, cinnamon and sugar, or hot chocolate mix

Equipment

Stove burner
Covered saucepan or electric popcorn popper
Small bowls or cups

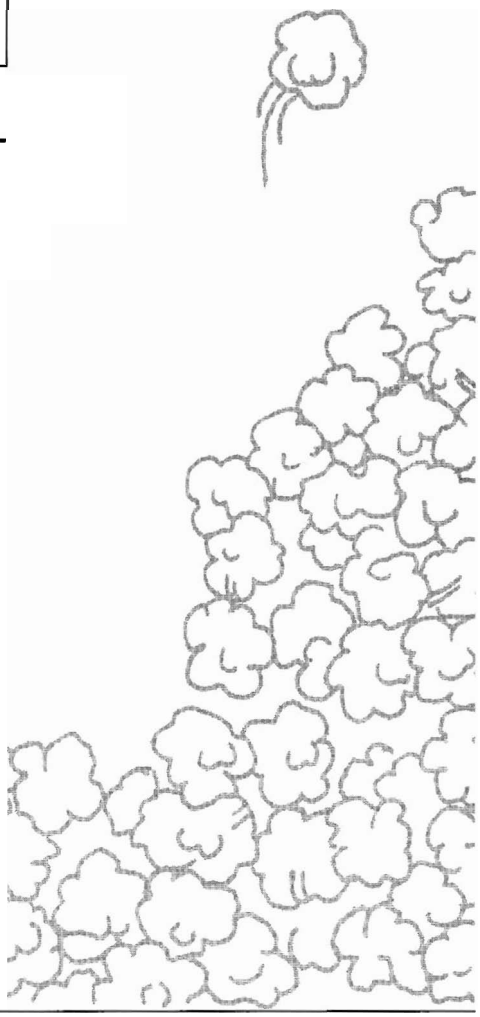
- Pop the popcorn as you did in Science Activity 1 and divide the popped popcorn into several bowls or cups.
- Sprinkle the popcorn in each bowl with a different topping.
- Which topping(s) do you like best?

Makes 4 servings

Exercise Connection

Popcorn Hop

As popcorn kernels heat up, they pop and hop in the pan. At first, just a few kernels pop, then more and more. Finally, they slow down until most are popped. Pretend that you are a pan of popcorn kernels. Turn up the "heat" and start to hop!



Other Books You Might Enjoy

Corn Is Maize by Aliki. New York: Harper Trophy, 1976.
This book follows the history of corn—how it was grown long ago and how it is grown today—and shows many foods that come from corn.

Science Fun with Peanuts and Popcorn by Rose Wyler. Englewood Cliffs, N.J.: Julian Messner, Division of Silver Burdett Press, 1986.
This book is full of easy and enjoyable science experiments using peanuts and popcorn, two favorite snacks.

Popcorn by Frank Asch. New York: Gold Banner Books, 1979.
A funny story for beginning readers describes what happens when every guest brings popcorn to Sam Bear's party.

The Popcorn Shop by Alice Low. New York: Scholastic, 1993.
A rhyming story for beginning readers tells about Popcorn Nell and her popcorn shop. Nell runs into problems when her large popping machine runs both day and night and fills the town with popcorn.

The Popcorn Dragon by Jane Thayer. New York: Scholastic, 1989.
A young dragon named Dexter likes to show off by breathing fire and smoke. No other animals will play with Dexter until he uses his talents to pop popcorn.

Talking Back Quick Evaluation Form

We would like to know about your experiences using this bag. Please complete this sheet and return it in the bag. Thanks.

1. Circle all of the people who worked together with the materials in this bag:

   ❑ mother
   ❑ father
   ❑ guardian
   ❑ child _____ (age)
   ❑ child's friend(s) _____ (ages)
   ❑ other adult
   ❑ brother(s) or sister(s) _____ (ages)

2. What parts did you do together? What parts did you especially enjoy? Check as many as apply.

	Did Together:	Enjoyed:
• Read and talked about the book	❑	❑
Did Science Activity 1	❑	❑
• Did Science Activity 2	❑	❑
• Tried the Cooking Connection recipe	❑	❑
Tried the Exercise Connection activity or game	❑	❑

3. Would you recommend this bag to a friend? ❑ yes ❑ no

4. How could we improve this bag? (Use back of sheet if necessary.)

You may keep the letter to families.
Please return the bag, book, and other equipment.

Dear Family:

We invite you to participate in a program called *In the Bag! Families Sharing Science Together*. This program helps families learn about nutrition through science and reading. *In The Bag!* is a series of take-home family science bags that focus on food—what's in it, where it comes from, how it tastes and smells, what happens when you measure, mix, cook, and more. As your family explores food, you will also experience the fun of learning about science together.

Each take-home bag contains a children's storybook to read together and suggestions and supplies to try some simple science activities related to food. The number of bags is limited so it is important to return the bags promptly so that all families can use them.

If your family would like to participate in this program, please complete and return the form below. Also, please indicate if you would be willing to help with the program by refilling bags or signing them out.

❑ Yes, we would like to try *In the Bag!* together at home.

My child_____ has permission to borrow the family science bags. I will be responsible for helping my child return the bags on time.

_____
signature of parent or guardian

_____
telephone number

I am willing to help with the program in some way. ❑ yes ❑ no