



In the Bag!

Families Sharing Science Together

Tracy J. Farrell and Patricia F. Thonney

Leader's Guide

A Cornell Cooperative Extension Publication

Acknowledgments

In the Bag! Families Sharing Science Together is one of several publications developed from the pilot project, *Taking Time Together: A Program for Children, Parents, and Caregivers to Explore Nutrition through Science and Reading Experiences*. Take-home family science bags were field-tested in selected school-age child care (SACC) programs with families whose children are aged 5 to 8. The project was supported by grants from the American Chemical Society and the New York State 4-H Foundation, Inc., and by funding from Cornell Cooperative Extension.

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Introducing *In the Bag!*

Families Sharing Science Together

Nutrition embraces many science concepts. Some relate to the nature of food and some to how food is handled in the body. *In the Bag! Families Sharing Science Together* was designed as a fun way for children ages 5 to 8 and their families to learn about food and nutrition through science and reading. The program consists of a series of take-home bags that encourage family members to read children's books with food-related themes, then do simple science experiments and other activities together.

The suggested science experiments are intended to help build skills related to science processes, techniques, and concepts. Among the process skills are observing, classifying, measuring, comparing, estimating, predicting, experimenting, and communicating. Techniques focus on handling and manipulating materials and simple equipment.

In the Bag! may be used in a variety of informal settings, including school-age child care (SACC) programs, summer camps, 4-H Cloverbud programs, EFNEP, science centers, and other community programs serving children and families. The program is also appropriate for use in school classrooms and libraries in schools or communities.

In Each Bag

After assembly, each *In the Bag!* take-home bag will contain

- A children's storybook with a food-related theme
- A letter to the family that tells about the contents of the bag and gives guidance for talking about the book, doing two science activities that relate to the book, preparing a food, and exercising or playing a game.
- Some supplies for doing the science activities



General Science Themes

Sensory Clues

The ability to observe is the most basic skill in science. All science activities depend on using one or more of our five senses—sight, touch, taste, smell, and hearing—to gather information about objects or events.

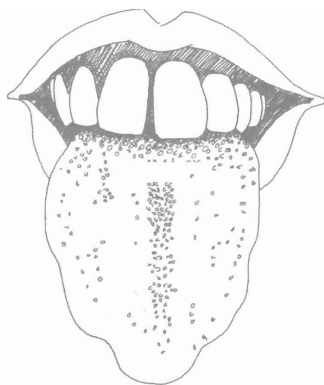
Comparing foods using all of the senses is an excellent way to develop observational skills. Talking about their observations allows children to expand their descriptive vocabulary.

Three of the take-home bags explore sensory properties of food. These three bags are called

“Explore Basic Tastes”

“Explore Smell and Taste Together”

“Explore Sounds and Smells”



Seeds All Around

Children can usually describe such physical characteristics of food as seeds or juice before considering the more abstract concepts of nutrients or chemical components. Exploring seeds gives children an opportunity to compare different textures, shapes, colors, and sizes. Children can observe physical characteristics of seeds and classify them in different ways. They can measure seeds and observe changes when popcorn kernels (corn seeds) are popped.

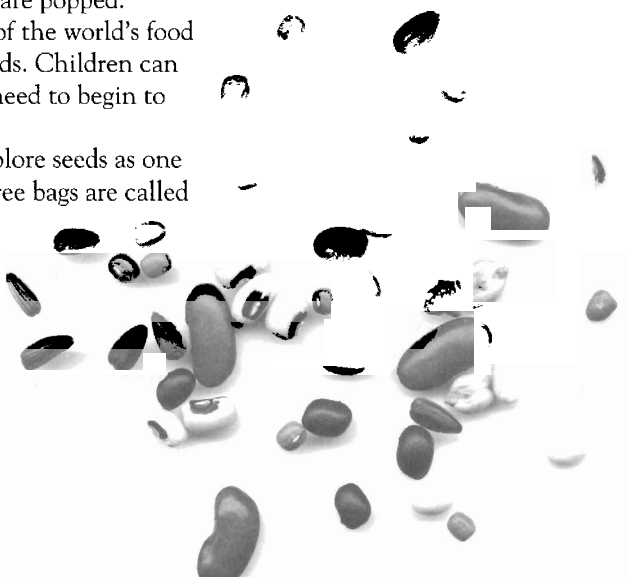
Foods from plants provide most of the world's food supply, and all plants grow from seeds. Children can experiment to find out what seeds need to begin to grow into plants.

Three of the take-home bags explore seeds as one physical property of food. These three bags are called

“Explore Seeds”

“Explore Seeds to Plants”

“Explore Popcorn”



Preparing to Use In the Bag!

The following guidelines will help you set up *In the Bag!* for use with families.

Contact Families

Contact parents or guardians to tell them about the program and ask them to sign up to participate. This family commitment is important because the take-home bags are designed for families, not for independent use by children. Children and adults work as partners to complete the activities. A master copy of a letter with permission form is included with the materials to be copied and sent home in the bags. (For a copy of the letter see page 12.)

Gather Materials

Use the "Supply List to Assemble Bags" (page 8) to help you acquire supplies for using the bags with ten families. You can adjust quantities as needed for your program. Determine how many families will use the set and collect all of the supplies at one time. Some supplies are permanent such as children's books or magnifying lenses and should be returned in the bags after each use. Other supplies are expendable such as plastic film containers or seeds, which must be restocked after each use.

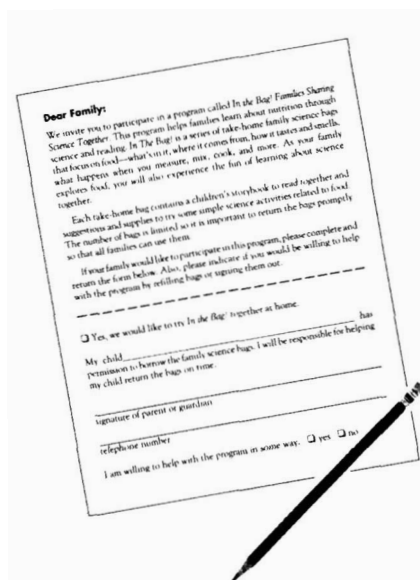
Refer to the "Checklists to Restock the Bags" sheets (pages 9–11). This information will help you organize materials to keep each bag circulating among families. Store the supplies for each bag in a separate container, labeled with a copy of the appropriate "Checklists to Restock the Bags."

Letters to Families

The letters to families are in a form for you to reproduce. Make enough copies for each family to keep.

Take-Home Bags

Hang-up plastic bags make ideal take-home bags because the colorful books and supplies inside will be



visible, attracting people's attention and helping market the program. Plastic bags are also inexpensive, easy to store, and provide weather-proof protection for the books and supplies during handling. Brodart Company at 1609 Memorial Ave., Williamsport, PA (phone 1-800-233-8467) sells inexpensive 14 1/2 x 12 1/2-inch hang-up plastic bags through its catalog; phone for current prices. Canvas bags or backpacks are another option.

Children's Books

All of the children's books used in the bags can be purchased in paperback editions costing \$3 to \$6. It is worth looking for a store that offers discounts. For example, LOGOS Bookstore at 115 The Commons, Ithaca, New York (phone 607-273-6360), offers an everyday 20 percent discount on all children's books. Scholastic Book Clubs, Inc., circulates fliers offering special discounts on selected children's books. You can call Scholastic Book Clubs at 1-800-724-2424. Scholastic also sells a wide selection of books through its catalog. The phone number for catalog sales is 1-800-631-1586.

Contact publishers only if you wish to order one hundred or more copies of a book or to get the name of a local source. Information on publishers as of 1995 is as follows:

Bread and Jam for Frances: Harper Collins, 1000 Keystone Industrial Park, Scranton, PA 18512-4621; phone 1-800-242-7737. Price \$3.50.

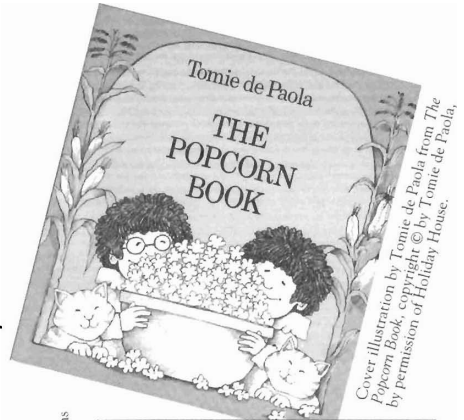
My Little Island: Harper Collins, 1000 Keystone Industrial Park, Scranton, PA 18512-4621; phone 1-800-242-7737. Price \$4.95.

In the Diner: Scholastic, Inc., 730 Broadway, New York, NY 10003; phone 1-800-325-6149. Price \$4.95.

Cherries and Cherry Pits: Greenwillow Books, division of William Morrow, 13550 Avenue of the Americas, New York, NY 10019; phone 1-800-821-1513. Price \$3.95.

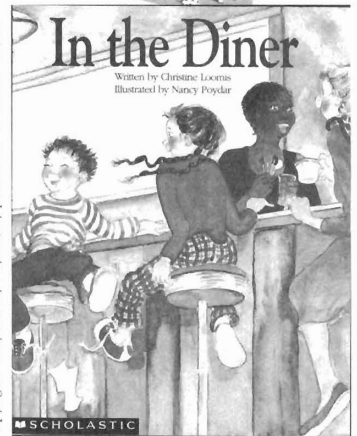
Rabbit Seeds: Bantam Doubleday, Dell Publishing, phone 1-800-223-5780. Price \$3.99.

The Popcorn Book: Holiday House, 425 Madison Avenue, New York, NY 10017; phone 212-688-0085. Price \$5.95.



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



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.

Other Supplies

Supplies other than books, both permanent and expendable, are easy to find and inexpensive. You will save restocking time if you prepackage some of the materials that must be added to the bags after each use. Small plastic bags are useful for holding seeds or other small items that need to be portioned.

Set Up a Loan System

A key to successful use of the *In the Bag!* program is to develop an efficient system for loaning bags and refilling supplies. It is easiest if one person monitors

the circulation of the bags and restocking them. A parent or other volunteer may be willing to take over this responsibility.

You can use 5 x 8-inch file cards to sign out the bags. Fill out the top of file cards with titles of the bags. Add headings for name of borrower, telephone number, date

borrowed, and date to

return and place a card in each bag. To

borrow a bag, a child or adult fills out the file card for you to keep until the bag is returned. Each letter to families contains a space to record the date the bag must be returned. A checkout time period of one week is suggested. Families are encouraged to keep the letter but to return a completed "Talking Back" sheet to help you evaluate the effectiveness of the program.

Monitor Success

The aim of *In the Bag! Families Sharing Science Together* is to provide a collection of science and reading experiences that support selected food and nutrition concepts appropriate for children ages 5 to 8. Specific goals of the program are for

Explore Sounds and Smells: In the Diner			
Name	Telephone	Date Borrowed	To Return
1. Amy Chapman	272-4573	4/25	5/2
2. Liz Cavanaugh	277-2331	6/12	6/19

- children to develop increased interest in science
children to enjoy science and reading experiences
- families to increase interactions among adults and children focused around science, reading, and nutrition.

In the Bag! Families Sharing Science Together evolved from the pilot project, *Taking Time Together: A Program for Children, Parents, and Caregivers to Explore Nutrition through Science and Reading Experiences*. Thirty-one families associated with three school-age child care (SACC) programs field-tested the take-home bags. Families returned evaluation forms for fifty-one of the fifty-eight bags that were borrowed.

Almost all of the families who participated in the pilot project were enthusiastic about the program materials. On 94 percent of the evaluations, families indicated that they would "recommend the program to a friend." Families reported reading 97 percent of the children's books and trying 87 percent of the suggested science activities. Of the books read and science activities tried, 98 percent of each were reported by families to have been "enjoyable." Many families also reported that older and younger siblings enjoyed listening to the books and participating in the science experiences.

A "Talking Back" form for quick evaluation is included with the materials to be copied and sent home in the bags. We encourage you to copy the form and send it home with the bags so you can monitor the effectiveness of this program. (For a copy of the form see the inside back cover.)

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
☐ grandpa
☐ 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	<input type="checkbox"/>	<input type="checkbox"/>
• Did Science Activity 1	<input type="checkbox"/>	<input type="checkbox"/>
• Did Science Activity 2	<input type="checkbox"/>	<input type="checkbox"/>
• Tried the Cooking Connection recipe	<input type="checkbox"/>	<input type="checkbox"/>
• Tried the Science Connection activity or game	<input type="checkbox"/>	<input type="checkbox"/>

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

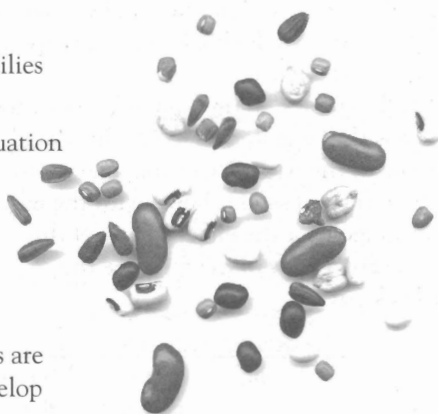
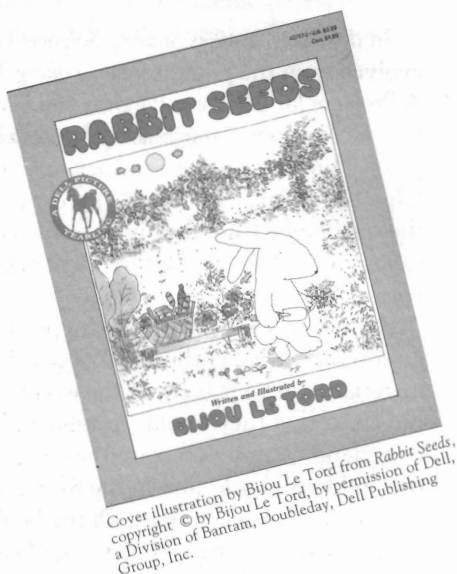
4. How could we improve this bag? (Use back of sheet if necessary)

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

Supply List to Assemble Bags

The following supplies are needed to assemble six take-home bags (one copy) for use by ten families. The quantities can be adjusted to serve more or fewer families.

- ☐ 1 copy of the book *Bread and Jam for Frances* by Russell Hoban, published by Harper & Row
- ☐ 1 copy of the book *My Little Island* by Frané Lessac, published by Harper Trophy
- ☐ 1 copy of the book *In the Diner* by Christine Loomis, published by Scholastic, Inc.
- ☐ 1 copy of the book *Cherries and Cherry Pits* by Vera B. Williams, published by Green Willow Books
- ☐ 1 copy of the book *Rabbit Seeds* by Bijou Le Tord, published by Dell Publishing
- ☐ 1 copy of the book *The Popcorn Book* by Tomie de Paola, published by Holiday House
- ☐ 6 plastic hang-up bags
- ☐ A master copy of each of the 6 letters to families (make 10 copies of each letter)
- ☐ A master copy of "Talking Back" quick evaluation (make 60 copies)
- ☐ 80 cotton-tipped swabs
- ☐ 40 plastic zip-top sandwich bags
- ☐ 1 pound of fruit-flavored jelly beans
- ☐ 40 empty opaque film containers (containers are often available free from businesses that develop film)
- ☐ An assortment of seeds in a sturdy zip-top plastic bag (an assortment that works well is several dry kidney, black, and white beans; lentils; popcorn kernels; and seeds from peaches, apples, pears, watermelon, and squash)
- ☐ 2 small plastic magnifying lenses
- ☐ 120 dry kidney bean seeds (about 1/2 cup of dry beans)
- ☐ 3 cups of unpopped popcorn kernels



Checklists to Restock the Bags

Explore Basic Tastes

(book *Bread and Jam for Frances*)

Check to make sure the following item was returned with the bag:

- The book *Bread and Jam for Frances*

Replace before each use:

- “Explore Basic Tastes” letter to families
- Copy of “Talking Back” quick evaluation
- 8 cotton-tipped swabs in plastic zip-top sandwich bag

Explore Smell and Taste Together

(book *My Little Island*)

Check to make sure the following item was returned with the bag:

- The book *My Little Island*

Replace before each use:

- “Explore Smell and Taste Together” letter to families
- Copy of “Talking Back” quick evaluation
- 8 fruit-flavored jelly beans (2 of each flavor) in plastic zip-top sandwich bag

Checklists to Restock the Bags *(continued)*

Explore Sounds and Smells

(book *In the Diner*)

Check to make sure the following item was returned with the bag:

- The book *In the Diner*

Replace before each use:

- “Explore Sounds and Smells” letter to families
- Copy of “Talking Back” quick evaluation
- 4 opaque empty film containers

Explore Seeds

(book *Cherries and Cherry Pits*)

Check to make sure the following items have been returned with the bag:

- The book *Cherries and Cherry Pits*
- Assortment of seeds in sturdy zip-top plastic bag (an assortment that works well is several dry kidney, black, and white beans; lentils; popcorn kernels; and seeds from peaches, apples, pears, watermelon, and squash)
- Magnifying lens

Replace before each use:

- “Explore Seeds” letter to families
- Copy of “Talking Back” quick evaluation

Explore Seeds to Plants

(book *Rabbit Seeds*)

Check to make sure the following items have been returned with the bag:

- The book *Rabbit Seeds*
- Magnifying lens

Replace before each use:

- “Explore Seeds to Plants” letter to families
- Copy of “Talking Back” quick evaluation
- 12 kidney bean seeds in plastic zip-top sandwich bag

Explore Popcorn

(book *The Popcorn Book*)

Check to make sure the following item was returned with the bag:

- The book *The Popcorn Book*

Replace before each use:

- “Explore Popcorn” letter to families
- Copy of “Talking Back” quick evaluation
- 1/4 cup of unpopped popcorn kernels in plastic zip-top sandwich bag

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.

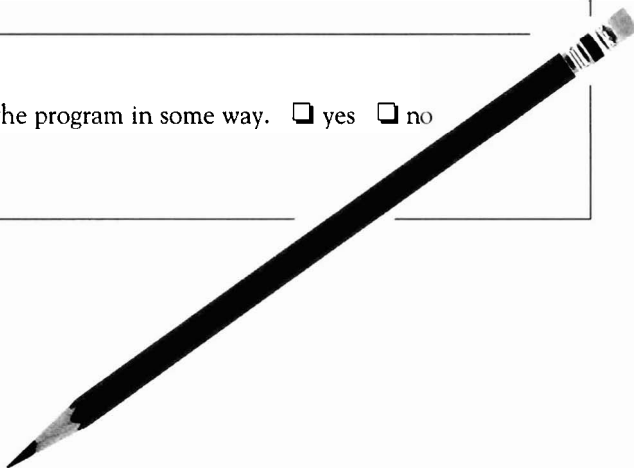
☐ Yes, we would like to try *In the Bag!* together at home.

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



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	<input type="checkbox"/>	<input type="checkbox"/>
• Did Science Activity 1	<input type="checkbox"/>	<input type="checkbox"/>
• Did Science Activity 2	<input type="checkbox"/>	<input type="checkbox"/>
• Tried the Cooking Connection recipe	<input type="checkbox"/>	<input type="checkbox"/>
• Tried the Exercise Connection activity or game	<input type="checkbox"/>	<input type="checkbox"/>

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.*