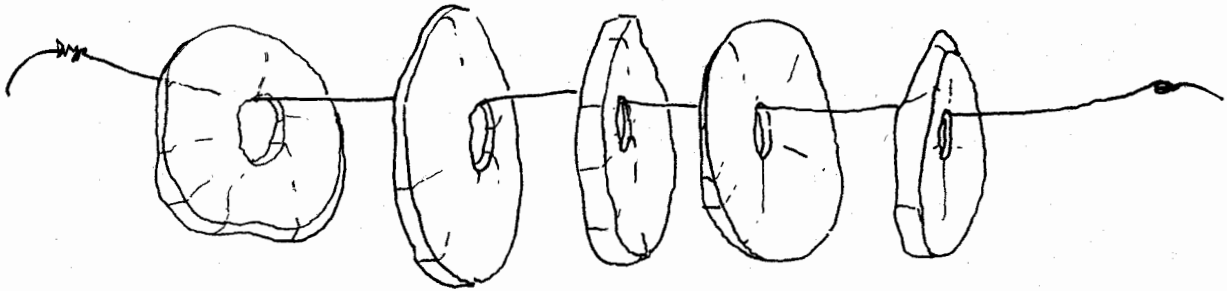


How to Keep a Good Thing Going

Preserving food for later



Recommended Grades: K-6

- ◆ **Math**
- ◆ **Science**
- ◆ **Life Skills**

Goals

Explore different methods of processing foods to preserve nutrients.

Key Points

- ◆ Food processing and preservation have been around since humans started growing food. Up until modern times, preserving foods through drying, salting, culturing, or pickling were typical ways to survive in temperate climates.

Background

The easiest way to eat locally grown foods year-round is to preserve them when they are in season. Involving children in this part of the food cycle exposes them to methods that have been used throughout history—drying, salting, or pickling—and “newer” methods such as canning, quick drying, and freezing. In this class, for ease and safety, we’ll try the drying method.

Nutrients are preserved differently in various

methods of conserving food: fresh from the garden is best, quick-frozen is next best, followed by dried, salted, and pickled foods.

Three Preservation Methods

Canning. Clean cooked food is placed in cans or jars and heated to a temperature that destroys micro-organisms that could cause the food to spoil. Heat causes the air to leave the can and creates a vacuum. As a result of the vacuum, covers are sealed, keeping micro-organisms out.

Freezing. Freezing is an easy modern way of preserving food, although it requires more energy use. It doesn’t sterilize food but the extreme cold temperature prevents micro-organisms from growing. Generally, vegetables are blanched (dropped into boiling water) or steamed to kill external microbes, then plunged into cold water. Foods may be frozen in freezer-grade bags or in clean containers.

Drying. This is one of the oldest methods of preserving food—it’s simple, safe, and easy to learn. Drying removes moisture from food so that bacteria, yeasts, and molds cannot grow. Dried fruits and vegetables taste sweeter than fresh, since removing the water concentrates the flavor. This method uses the least energy.



What You'll Need

Examples of various types of processed foods—canned, dried, salted, pickled, and frozen; a piece of rotting food (isn't that a lovely item for your materials list?!); fresh produce (such as peppers, tomatoes, apples); a food dehydrator (ask someone for a loan—low temperature oven-drying is another possibility); kitchen utensils: knives, cutting boards; tongs; cleaning supplies; aprons; labeling markers; labels; clean kitchen towels; directions at each station/center delineating tasks.



Getting Ready

See Making Food with Children on page 217 in the Appendix. Caution students about kitchen rules and the use of sharp kitchen utensils; prepare kitchen—cutting boards, adequate space, and labeling. If using a dehydrator, plan to do this activity on a day that will allow a 24-hour follow-up. Cooperative Extension staff are valuable resources and may be willing to help with this class if you contact them early enough.

How to Do It

Begin the activity by holding up a tomato (or other food) that has started to rot. Ask what's going on. Talk about micro-organism growth—rotting or decay is food's natural way of decomposing, and worms' gourmet choice! How are foods kept from spoiling? Pose the questions: How can we continue to eat local, seasonal foods when our growing season is over? What are ways to keep foods longer without adding salt, sugar, or other additives that are commonly found in canned foods? Explain that these additives are usually included in foods to allow the food to last longer before being eaten.

Discuss different methods of preserving food and show some examples. Ask: What foods do you have at home that have been preserved in some way? Have students describe ways they've helped

their families preserve food or what they may have observed, read about, or noticed before. Explain that today they'll be drying foods as a method of preserving them for later consumption.

Next, divide the class into groups and discuss what will be happening at each workstation: washing and pat-drying; coring fruit and trimming as needed; slicing and arranging on trays or stringing. If desired, you may dip apples into pineapple or citrus juice to keep them from browning. If the classroom has low humidity, hang apple rings on string lines that can be covered with cheesecloth to prevent dust accumulation. Explain that dryer fruits, like an apple slice, will air dry, but a moist fruit, like a tomato slice, needs extra help, like the hot sun or a dehydrator. For tomatoes, wash, slice vertically into even thicknesses, place on racks. Start dehydrator (if using one). Prepare and label storage bags or containers. Clean up. Put refuse in compost. When your fruit or vegetables are dry, place them in prepared containers.



Classroom Conversations

Imagine doing this activity before modern times. How would it be the same or different?

Want to Do More?

- ◆ Ask a local senior citizen to contribute his or her experience and help to this activity.
- ◆ Study native or colonial history, focusing on food preservation methods as a way to learn about their day-to-day life.
- ◆ Research how different preservation/processing methods affect the nutrient content in foods.
- ◆ Make labels for selected preserved foods and give as gifts to school food service staff, teachers, or families, or use in a "Summer-in-Winter Tasting Celebration."
- ◆ Make "fruit leather" by spreading applesauce or



any other fruit purée and baking on a cookie sheet for 2-3 hours. In some classes with low humidity, an oven for drying is unnecessary!

- ◆ Play the "Pioneer Apple Peel Game." To play, take a long peeling from an apple. Twirl the peel above your head and toss over your left shoulder. What letter does the peel resemble? (This is the initial of the person who will be your mate for life!)
- ◆ Set aside times to taste and inspect dried food during the process and to test for doneness.
- ◆ Visit a local food processing plant to observe how food is preserved there.

Lesson Links

Old-Fashioned Food
Pyramids Near You
Once Upon a Farm

Literature Links

The March of the Harvest by Irma Johnson
The Autumn Equinox—Celebrating the Harvest by Ellen Jackson
Itse Selu: Cherokee Harvest Festival by Daniel Pennington
The Sacred Harvest: The Ojibway Wild Rice Gathering by Gordon Regguinti
Early Stores and Markets (Early Settler Series) by Bobbie Kalman

Resources

- ◆ Community members for volunteers and background information.
- ◆ School nutrition director or staff for supplies or possible support with kitchen facilities.
- ◆ For current canning or preserving information,

and educational assistance, contact your local Cooperative Extension:

- ◆ *Victory Garden Cookbook Putting Food By*, by Marian Morash, 4th Edition, Alfred Knopf, 1982.
- ◆ *USDA's Complete Guide to Home Canning* available through some land grant Universities (Cooperative Extension) or as a publication—*Complete Guide to Home Canning and Preserving*, 2nd rev. ed., Dover Publications, 1999, ISBN 0-48640-931-7. For up-to-date preservation techniques and information.
- ◆ *Ball Blue Book—Guide to Home Canning, Freezing & Dehydration* is a comprehensive food preservation resource. See www.homecanning.com for ordering or for information on home food preservation.
- ◆ Rural and urban people interested in supporting family size farms will find many helpful resources when they visit the Community Alliance for Family Farmers site: www.caff.org
- ◆ *Pickled, Potted, and Canned: How the Art of Food Preserving Changed the World* by Sue Shephard, Simon and Schuster, 2001, for a historical perspective on food preservation.
- ◆ *Putting Food By*, 4th ed., by Green, Hertzberg, and Vaughn, Penguin, USA, 1992.

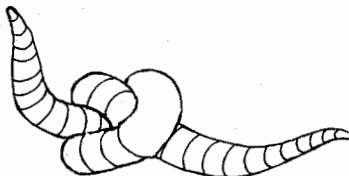
Benchmarks

The Designed World: 8A—Agriculture, p. 184

Grades 3-5

"Heating, salting, smoking, drying, cooling, and airtight packaging are ways to slow down the spoiling of food by microscopic organisms. These methods make it possible for food to be stored for long intervals before being used."

How do you fix a cracked pumpkin?
With a pumpkin patch.



What does corn say when it's picked?
Ouch! My ears!