



HERBS AND SPICES

PRE-VISIT ACTIVITIES

Your class will soon be attending the Herbs and Spices workshop at Brooklyn Botanic Garden. In this class, students will be able to touch, smell and examine a variety of herb and spice plants. They will have opportunities to grind spices and make an herbal tea bag to take home.

Choose one or more of the following discussions and activities to begin to explore the topic of herbs and spices with your students.

The Spice of Life

- *What if all the food you ate had the same flavor? How important is flavor when we choose which foods we want to eat?*
Chocolate chip omelets, salad with chocolate dressing, chocolate bar sandwich, chocolate muffin, chocolate pie with chocolate syrup with chocolate milk? Even if you loved chocolate, you would get tired of food that tasted the same. Herbs and spices add a variety of flavors to our food.
- *Can you think of some herbs and spices that you use to add flavor to foods?*
Mustard on hot dogs, garlic on pizza, pepper on eggs
- *What is your favorite flavoring to add to foods?*
- *How many herbs and spices do you have at home in your kitchen? Which ones?*
Students can research this answer for homework. Some herbs and spices to look for:

Black Pepper	Vanilla
Chocolate	Cloves
Ginger	Allspice
Mustard	Garlic
Nutmeg	Cayenne/Chile Pepper
Paprika	Cinnamon
Curry Powder	Parsley
Oregano	Coriander
Bay Leaves	Fennel
- *These herbs and spices all come from plants! What parts of plants are these spices from?*
Herbs come from the green parts of plants, specifically the leaves. Flowers, such as those of chamomile, lavender, hibiscus and marigold used as herbal teas, medicines and flavorings, are also considered herbs. Spices come from the stems, bark, roots, or seeds of a plant. Here are some examples of herbs: basil, parsley, oregano, rosemary. Spices include cinnamon (bark), black pepper (fruit), ginger (rhizome, an underground stem), and chocolate (seed).

- *Where in the world do your favorite herbs and spices come from? What is the climate like in those places?*

Interestingly, because herbs and spices were brought around the world many years ago, a culture or culinary tradition may be known for using a particular herb or spice in their traditional dishes though the plant is not originally from their part of the world. Here are some seasonings and the dishes they are famous for flavoring: where did the herbs or spices come from originally?

Cilantro, used in Mexican salsa

Chile Pepper found in Korean kim chee

Oregano, added to Italian tomato sauce for spaghetti

Wasabi to eat with Japanese sushi

Jamaican 'Jerk' seasoning to flavor chicken, beef, lamb and pork

Curry to spice up Indian, Pakistani, and Southeast Asian dishes

BOOKS TO READ ABOUT HERBS AND SPICES

Flavor Foods: Spices and Herbs by Meredith Sayles Hughes; Minneapolis, Minnesota: Lerner Publications, 2000

The Spice Alphabet Book: herbs, spices, and other natural flavors by Jerry Pallotta; Watertown, Massachusetts: Charlesbridge Press, 1994



Savory Reading

Ginger: To Eat and Drink

READ the story of *The Gingerbread Man* (for a NYC twist, try The Gingerbread Boy by Richard Egielski).

- Provide a piece of fresh, whole ginger and/or ginger powder for students to smell and possibly taste!

From *And Everything Nice: the Story of Sugar, Spice and Flavoring**:

“It is said that gingerbread was invented by a Greek baker almost five thousand years ago. Bakers made gingerbread in ancient Egypt and in ancient Rome. The rules for making it were carried to the British Isles even before there was an England.

In the Middle Ages, monks made gingerbread in the monasteries. Instead of baking it like a traditional bread or cake, the monks began to cut it into fancy shapes. They made gingerbread animals, birds, flowers, letters of the alphabet, and people. Everybody, especially children, loved the fancy gingerbread figures that were baked in the monastery kitchens.

At the time of Queen Elizabeth the First, gingerbread was still a popular sweet in England. The Queen once planned a special surprise for the lords and ladies who came to a palace banquet. Each one was given a large gingerbread figure. The figure looked just like the person who received it! Bakers and artists had made a portrait in gingerbread of each lord and lady at the banquet.

Gingerbread is still popular today and ginger is used to spice other foods, too. Ginger comes from a plant that first grew in Asia. From there, it spread to Africa, the West Indies, South America, and Australia. “

EAT AND DRINK

Have your own Lords and Ladies Ginger Party with gingerbread cookies or ginger snaps and sparkling ginger ale soda!

Cinnamon: The Nests of Monsters

READ this short version of the legend of the Cinnamon Monsters from *And Everything Nice: the Story of Sugar, Spice and Flavoring**:

“Once more valuable than gold, cinnamon is unique in that it is made by grinding the inner bark of trees that originally grew in very few places. In fact, one type of cinnamon only grew on the island of Sri Lanka (Ceylon) until explorers and merchants from other countries and cultures took the trees and began to plant them in other tropical areas around the world.

An Arab legend that is thousands of years old related that cinnamon trees grew in a secret, shallow lake, guarded by monsters with wings. These monsters were like bats, and were very fierce. The monsters stripped rolls of bark from the cinnamon trees to make their nests, which they built against steep mountain cliffs. According to the tale, when the Arabs came to gather cinnamon bark for themselves they would put large pieces of meat at the foot of the cliffs to lure the monsters down. When the winged monsters carried the meat back up to their nests the nests would break apart under the added weight and the Arabs would quickly gather up the fallen cinnamon bark strips as they fell to the ground.

A great traveler in ancient times named Herodotus heard this legend of the cinnamon monsters. He was a Greek scholar who was writing the history of the world and he included this story in his book. He studied people of many lands and cultures – speaking with them, watching them and listening to their stories. Do you believe the Arab legend? Does the tale make you want to find the home of the cinnamon trees or does it make you afraid? Herodotus may or may not have believed the story to be true, but he did include it in his book. The many different stories he recorded make his books so interesting to read, all these years later.

Even today, after thousands of years, the Arab legend makes us wonder. The spice trade was a very big business in ancient times for the Arab merchants and they did many things to keep the sources of their spices a secret. Even Herodotus did not know the actual location of the cinnamon trees, but because he recorded the story we understand how the Arabs were able to frighten people away from looking for their cinnamon trees!

The one part of the cinnamon monster tale that is true is that cinnamon is made from the inner bark of trees. The original cinnamon trees grew in Southeast Asia. In the rainy season, when the bark can be peeled easily, strips of it are cut from the lower branches of the trees. The strips are left to dry for a day and then the outer bark is scraped away. The inner bark is deliciously fragrant. As the strips of inner bark dry out, they darken and curl up, forming long, slender quills that look like straws. They dry quills are sorted, graded, and then packed and shipped to factories. There they may be ground to powder, sifted, and put into the boxes and shakers that you see at the markets.”

- *Can you think of ways that we use cinnamon today? We sprinkle it in cakes, buns, pies like apple pie and doughnuts.*
- *Did you know that cinnamon is our number two spice? Which spice do you think is number one, the one used the most? (black pepper)*

EAT

Cinnamon Toast: In a cup, mix two teaspoonfuls of sugar and one teaspoonful of cinnamon. Toast a large piece of white, wheat, or raisin bread. Butter the toast while it is still hot and then sprinkle on the sugar-cinnamon mixture. Smell the fragrance and then eat!

*And Everything Nice: The Story of Sugar, Spice and Flavoring by Elizabeth K. Cooper; New York: Harcourt, Brace and World Incorporated, 1966



HEALING HERBS AND TEA

Herbs and spices are not just for use in our foods and beverages; they are used for healing too!

Aloe vera treats burns, chamomile tea soothes stomachs, and witch hazel disinfects!

- *Do you know of medicines that come from plants? Which ones?*

Aloe leaves can be purchased at supermarkets or small green grocers. Bring one to class to motivate student discussion about this healing herb. Many students will be familiar with the plant and products made from it that they drink or eat (juice and gels) or use in skin and hair care products.

Cocoa butter, extracted from *Cacao* seeds, is an ingredient in skin care products; its fragrance suggests its origin – *Cacao* seeds are also the source of cocoa powder used to make chocolate! Bring some cocoa butter lotion products in for students to smell and sample.

TEA

During the workshop at BBG, each student will make their own herbal tea bag using fresh, dried herbs and spices. Ask your students if they are familiar with tea, if they drink it or if others in their home drink tea. Many herbal teas have medicinal qualities. Students may be familiar with chamomile and peppermint teas. *What are the healing properties of these types of tea?*

Other beverages with healing properties:

- Ginger ale as a soothing remedy for upset stomachs or fever. Ginger tea relieves stuffy noses and sinuses.
- Cola beverages to settle upset stomachs. Cola syrup is an old time remedy for the same ailment.



BOOKS TO READ ABOUT MEDICINAL PLANTS

Fiction

The Bridge Dancers by Carol Saller; Minneapolis: Carolrhoda Books, Incorporated, 1991 Ages 7 – 12
This is a story about a young girl who uses herbal medicine to help her sister.

Non-Fiction

Pharmacy in the Forest: How Medicines are Found in the Natural World by Fred Powladge
New York: Atheneum Books/Simon and Schuster Publishers, 1998

The Shaman's Apprentice: A Tale of the Amazon Rain Forest by Lynne Cherry and Mark Plotkin
Illustrated by Lynne Cherry; San Diego: Harcourt, Brace and Company, 1998

“Just the Facts” About Plants

Here are some facts about plants to support your teaching and learning about plants in preparation for the Herbs and Spices workshop at BBG. We suggest you use this background information to enhance your own understanding and guide students' understanding. Many of these concepts and facts will be explored with your students during the workshop program, in particular the topic of plant parts and their uses so if they don't come up in your pre-visit discussions we will introduce students to them during our program together.

1. What do plants need to grow? Plants require carbon dioxide and oxygen from the air, varying amounts of light, water, and warmth to live. They need space to grow and minerals for healthy growth and structure.
2. Photosynthesis - is the process by which green plants can make their own food. “Photo” means “light,” and “synthesis” means “to place together.” During photosynthesis, carbon dioxide (CO₂) and water are brought together chemically to make food in the form of sugars (carbohydrates) for the plant, and oxygen. The green pigment chlorophyll traps the light energy from the sun that is used for this process. All of the green parts of plants are able to make sugars. The oxygen given off by plants as a result of photosynthesis sustains most living things on Earth. Plants are the only multicellular organisms that can make their own food.
3. Plant Parts – A typical plant consists of six major parts:

ROOT: absorbs water and minerals, anchors the plant, stores food and water

STEM: transports sugars, water and minerals to the various plant parts, serves as support for other plant parts including leaves, flowers and fruits

LEAF: usually has the most surface area for photosynthesis and has pores (stomata) through which gases can be exchanged with the air

FLOWER: contains the reproductive organs of the plant that give rise to the seeds; part of the flower becomes the fruit

FRUIT: contains the seeds and is a vehicle for seed dispersal

SEED: contains the embryo (baby) plant and often a food supply to support the early growth of the seedling.

4. Fruit or Vegetable? Can you think of what beans, walnuts, tomatoes, apples, cucumbers, milkweed pods all have in common? If you said that they are all the part of the plant which holds the seeds you were correct. Most people agree that apples, oranges, pineapples and mangoes are fruits but you will spark a lively discussion when you suggest that pumpkins, tomatoes, cucumbers and peppers are also fruits.

Botanists, the scientists that study plants, define *the part of the plant that holds and disperses the seeds the fruit*. Therefore pumpkins, tomatoes, peppers, cucumbers, and string beans are all fruits.

Botanically, a *vegetable* is a root (carrot, radish, beet), stem (sugar cane, asparagus), leaf stalk (celery) or leaf (cabbage, collards, mustard greens, lettuce) that we eat. Broccoli and cauliflower “florets” are the unopened flower buds of their plants! Other edible flowers include squash blossoms and *Nasturtium*.

Horticulturists and farmers often used a broader definition of a *vegetable* to be *any edible part of a plant*. They would therefore say that a fruit can also be called a vegetable.

5. Are all Fruits or Seeds Edible? The purpose of the fruit is to disperse the seeds to locations at some distance from the parent plant. Why? If a plant’s seeds all germinated right under them the seedlings and the parent would be competing for survival. If the seeds can be dispersed far and wide there will be a greater chance that seedlings will grow into mature plants. The range of the plant’s species will increase.

Sweet, juicy fruits are produced by plants specifically to lure animals to eat them, swallow the seeds and ‘poop’ them out or discard them somewhere farther away from the parent plant. Not all fruits are sweet and juicy, however! Some fruits and/or seeds are designed to “fly”, some are designed to “float”, and some are designed to “hitchhike” on the fur or feathers of animals.