

- **A Harvest of the Best ... from Across the Nation**
National Ag in the Classroom Conference 2010

State: West Virginia (WV)

Lesson

Title: Spices in History and Your Life

Subject: The role of spices in history and food.

Skills: Reading, Sorting, Spelling, History, Geography, Science

Grade Level: K - 6

Length of Lesson/Activity: Up to three 45 minute class periods

Overview: Spices have played a role in history for a long time. This lesson will provide some creative and interesting ways to connect children to plants and history while having fun. Spices have been used for thousands of years throughout Asia, Arabia, and the Mediterranean region. Once valued as highly as gold, they were much sought after in the West and the quest for spices influenced the course of history. Countries vied to win control over their production, navigators set sail to discover new sea routes to the east, allowing small nations to build large empires. Although the days of fighting over spices has ended, spices still play a significant role in the economies of many countries and help make our food more enjoyable and flavorful.

A spice is defined as any dried plant product used primarily for seasoning purposes.

Materials needed:

Ingredient labels from cereals or food products students have eaten

Have students bring spices in from home

Collect spices in their various raw forms – Try Oriental Shops and ethnic markets

Flavor Foods: Spices & Herbs by Meredith Sayles Hughes ISBN 0-8225-2835-5

The Spice Alphabet Book by Jerry Pallotta, Charlesbridge Publishing, 1994, ISBN 0-88106-897-7

The Gingerbread Man Available on line at <http://www.topmarks.co.uk/stories/gingerbread.htm>

Mini book unit template to make copies for class – available at

<http://www.dltk-teach.com/minibooks/gingerbread-man/index.htm>

** Note **Extensions require additional items as listed on each Extension.

Teaching the Lesson:

Introduction:

1. Ask students what spice they eat for breakfast? Remember that lots of cereals today have vanilla or cinnamon along with other flavorings. Have them imagine if they didn't have any flavoring added. How would it taste? Have student bring in food labels with spices included on them or provide them.

Activity One

1. Read the Gingerbread Man story to students. Available at <http://www.topmarks.co.uk/stories/gingerbread.htm> - the Traditional Gingerbread Man story
You might also ask if they have made gingerbread cookies or a gingerbread house. What does real ginger look like? Is it the same thing used to make Ginger ale?
2. Have students make their own Gingerbread man book using the template provided at <http://www.dltk-teach.com/minibooks/gingerbread-man/index.htm> - Mini book unit

Activity Two

1. Using the book *Flavor Foods: Spices & Herbs* by Meredith Sayles Hughes or the Spice Advice Encyclopedia located at <http://www.spiceadvice.com/encyclopedia/index.html> and other resources have students research to find out what part of the plant the spice label or actual spice they ate or brought in to class came from.
2. Have students study spice names and make their own Spice Alphabet book using *The Spice Alphabet Book* by Jerry Pallotta

Extensions

1. Have students make Applesauce Spice Ornaments that can be given as gifts on a special occasion. While doing this activity talk about the spices being used (Cinnamon, Allspice, Cloves, and Nutmeg). How are the spices spelled? Provide some of the history surrounding these spices. Where in the world do these spices grow today?
2. Give your students a treat and have them make Ice Cream in A Bag if they can identify the spice used to flavor Vanilla ice cream (vanilla). (Briefing sheets on Allspice, Cinnamon, Cloves, Ginger, Nutmeg and Vanilla are included with this lesson.)

Evaluation

1. Assess the students' written work, quality of research, spelling and sequencing.
2. Assess the students' ability to accomplish the activities.
3. Quiz the students on the parts of the plant and where the spices grown on the plant.

Include any of the following that would be helpful

- **Resources for Children**

1. *Flavor Foods: Spices & Herbs* by Meredith Sayles Hughes, Lerner Publications Company, 1999, ISBN 0-8225-2835-5
2. *The Spice Alphabet Book* by Jerry Pallotta, Charlesbridge Publishing, 1994, ISBN 0-88106-897-7

- **Resources for reference**

3. *The Spice and Herb Bible* by Ian Hemphill, Robert Rose Pub., 2006, ISBN -13 978-0-7788-0146-7

- **Related Websites**

4. <http://www.nationalgeographic.com/xpeditions/lessons/16/gk2/spices.html> - Spices of the World Lesson Plan
5. <http://www.learner.org/exhibits/renaissance/spicetrade/> - Become a Spice Trader
6. <http://www.spiceadvice.com/encyclopedia/index.html> - Spice Advice Encyclopedia

Ginger bread sites:

7. <http://www.topmarks.co.uk/stories/gingerbread.htm> - the Traditional Gingerbread Man story

8. <http://www.dltk-teach.com/minibooks/gingerbread-man/index.htm> - Mini book unit

Lesson Developed by: Mary Beth Bennett, Berkeley County Extension Office, 400 West Stephen Street, Suite 302, Martinsburg, WV 25401 MBBennett@mail.wvu.edu

Your e-mail address: MBBennett@mail.wvu.edu

Extension Materials

Applesauce Spice Ornaments

5 days for drying and 1 hour preparation

Supplies needed

$\frac{3}{4}$ Cup ground cinnamon

1 Tablespoon allspice

2 Tablespoons ground cloves

1 Tablespoon nutmeg

1 Cup Applesauce

A bowl for mixing ingredients together

A rolling pin

Cookie sheets

Cookie cutters

A toothpick or something to make a small hole on top of the ornament

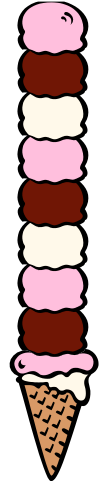
Ribbon or yarn

1. Combine spices in a bowl.
2. Add applesauce to the spice mix in step 1.
3. Roll dough onto ungreased cookie sheet to 1/4-inch thickness.
4. Cut into desired shapes with cookie cutters.
5. Remove excess dough and repeat process on other cookie sheets.
6. Make a hole in top of each shape.
7. Allow to dry for 5 days.
8. Tie ribbon or yarn through hole.
9. May be decorated with acrylic paint.

Ice Cream In A Bag

MATERIALS

- 🍷 ¼ Cup sugar
- 🍷 ½ Teaspoon vanilla
- 🍷 1 Cup milk
- 🍷 1 Cup half & half
- 🍷 Crushed ice (1 bag of ice will freeze three bags of ice cream)
- 🍷 1 Cup rock salt (approximately 8 cups per 5 lbs)
- 🍷 1 quart-size and 1 gallon-size Ziploc freezer bags
- 🍷 Duct tape
- 🍷 Bath towel



Put the milk, whipping cream, sugar and vanilla in the 1 quart freezer bag and seal. For security, fold a piece of duct tape over the seal.

Place the bag with the ingredients inside the gallon-size freezer bag.

Pack the larger bag with crushed ice around the smaller bag. Pour $\frac{3}{4}$ to 1 cup of salt evenly over the ice.

Seal the outer bag. Wrap both in a towel and shake for 10 minutes. Open the outer bag and remove the inner bag with the ingredients. Wipe off the bag in order to keep the salt water from getting into the ice cream.

Cut the top off and spoon into cups. Serve plain or top with nuts, coconut or fruit.

ENJOY!



A Timeline of Spice History

5000 BC	MiddleEast	Evidence of spices being used
3000 BC	Egypt	Use of spices in embalming
2000 BC	Arabia	Monopoly of spice trade (for 2000+ years)
1500	Egypt	Queen Hathepshut imports spices from Punt (East Africa)
1000	Palestine	Use of spices in anointing oil and incenses
992	Arabia	Queen of Sheba brings spices to King Solomon
500	Greece	Importance of spices in diet as medicine
200	China	Cloves imported from Spice Islands
1 st Century AD	Rome	Extravagant use of spices
	Rome	Developed sea-trade with India, lasted 3 centuries
500	Europe	Spices form Moluccan Islands
	Arabia	Controlled spice trade until Middle Ages
1100	Europe	Crusades stimulated interest in spices
1200	England	Guild of Pepperers established, merged with Spicers
1250	Europe	Spices regarded as aphrodisiacs
1300	Italy	Marco Polo's book stimulates interest in Oriental spices
1350	Europe	Spices used as medicines & fumigants during Black Death
	Italy	Venice and Genoa control spice trade
1400	England	Spicers' Guild became Grocer's Company
	Portugal	Henry the Navigator stimulates sea discoveries
1450	Turkey	Controls spices, forced other sea route discoveries
	Spain	Columbus finds spices in Caribbean islands.
1500	Portugal	Controls spice trade after Vasco da Gama sails to India

1521	Spain	Magellan's expedition circumnavigates the globe
	Italy	Venice's spice wealth helps finance Renaissance
1550	England	Drake Circumnavigates globe; imports spices into England
1600	Holland	Gradually wrests Spice Islands from Portugal
	Spain	Competes for spice trade
1650	Holland	Controls spice trade from East Indies
1700	Ceylon	Coffee trees planted; later, grown in Brazil
	Europe	Coffee, chocolate and tobacco favored over spices
1750	France	Peter Poivre brings nutmegs and cloves to Mauritius and Reunion
	Holland	Destroys spices to try and create price increases
1800	England	Take over Spice Islands, briefly
	America	Pepper trade with East Indies makes millionaires in Salem, MA
1850	Europe	Spices are of decreasing significance
		Sugar becomes favored flavor
1900	World	Dietary fashions change; spices decrease in importance

Allspice (*Pimenta dioica*)



Allspice (*Pimenta dioica*) is the dried and cured, unripe berry from a tropical evergreen tree that is native to Jamaica, Cuba, Guatemala, Honduras and southern Mexico. Pimento trees are 23-33 feet tall, with some reaching a height of 49 feet.

Origins - West Indies and Central America

The first record of what was probably allspice occurs in the journal of Columbus's first voyage in 1492. Columbus showed the Natives of Cuba some peppercorns from the *Piper nigrum* vine, they recognized them and using sign language indicated there was an abundance of these in the neighborhood. Thus the confusion with naming began, with allspice being given the botanical name of *Pimenta*, the Spanish word for pepper that is also used to describe members of the capsicum family. Allspice is no botanical relation to pepper. Allspice earned its name because it tastes like a mix of pepper, cloves, cinnamon and nutmeg or mace. Allspice is the only important spice that still comes from its region of origin making it the only spice grown exclusively in the New World.

Uses

The Aztecs added allspice, along with vanilla, in a chocolate drink while the Mayan Indians used allspice in the embalming process. Long before the discovery of the Americas, the people of the islands used allspice to preserve meat and fish. In Jamaica, allspice is an important ingredient in jerk seasoning pastes that are rubbed onto chicken, meat, or fish for grilling. It is also used in breakfast breads, cakes and biscuits, soups, stews, and curries. Most of the world's crop goes to the food industry for use in commercial ketchups and other sauces.

Cinnamon (*Cinnamomum zeylanicum*)



True cinnamon is indigenous to Sri Lanka. It is the bark of an evergreen tree of the laurel family. Cinnamon trees allowed to grow in their wild state can grow 26- 56 feet tall. In order to cultivate cinnamon for production and harvesting the cinnamon tree is cut down to approximately 6 inches above the ground 2 to 3 years after planting and soil is mounded up around the stumps to encourage shoot development. Four to six shoots are allowed to develop for up to two years before being harvested when they are about 5 feet long and ½-1 inch in diameter. After cutting, unwanted shoots are pruned, the earth is piled up again and more canes in the “stand” of cinnamon will grow for the next harvest. For more information on this process go to <http://www.infolanka.com/discover/cinnamon/>

Origins – Ceylon, Western India (Malabar Coast)

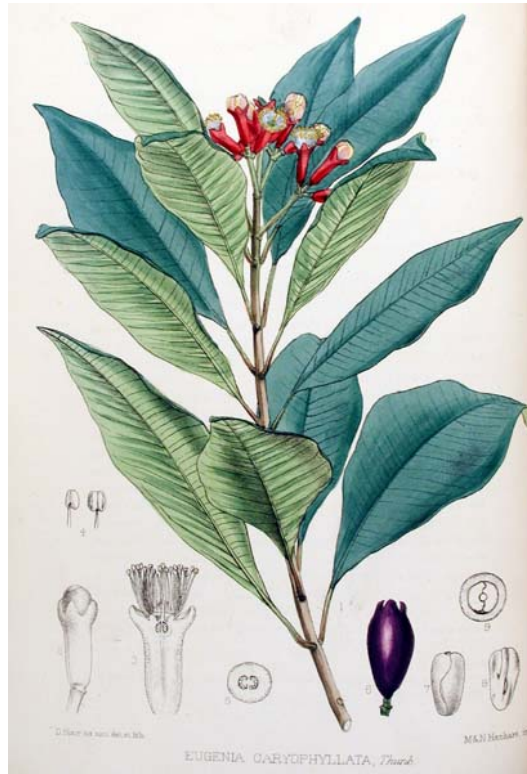
Cinnamon is said to be among the oldest of the spices. References to cinnamon date back 2,500 years to the land of the pharaohs, where cinnamon was used along with myrrh in the embalming process. It is possible that the Egyptian cinnamon in Pharaonic times was actually cassia which like cinnamon is harvested from the bark of a tree.

Today cinnamon is cultivated in Sri Lanka, East and West Indies, Mauritius, Reunion, southern India, Burma, Malaysia, Vietnam.

Uses

As noted above the Egyptians used it in burial ceremonies. The Hebrews, and others, used cinnamon and cassia in religious ceremonies, while in Mexico, Asiatic countries, Arabia and North Africa it was valued in cooking. The Roman Empire imported huge amounts of cinnamon and used it mostly in perfumes and fragrances and to flavor wines. Currently, cinnamon is regarded as a wonderful aroma in baked goods and mostly used for flavoring foods.

Cloves (*Eugenia caryophyllata* or *Syzygium aromaticum*)



Cloves (*Eugenia caryophyllata* or *Syzygium aromaticum*) are the dried, unopened flower buds of an attractive tropical evergreen tree that reaches about 33 feet in height and has dense, dark green foliage.

Origin – Molucca Islands

Cloves are native to the eastern Indonesian islands referred to as the Moluccas. Cloves were discovered in an archaeological dig in Syria in a domestic kitchen site dating back to 1700 BC. Cloves were believed to have been introduced to China during the Han Dynasty (206 BC-AD 220). Cloves were the first form of breath freshener, as it is recorded that courtiers held cloves in their mouths to sweeten the breath when addressing the emperor.

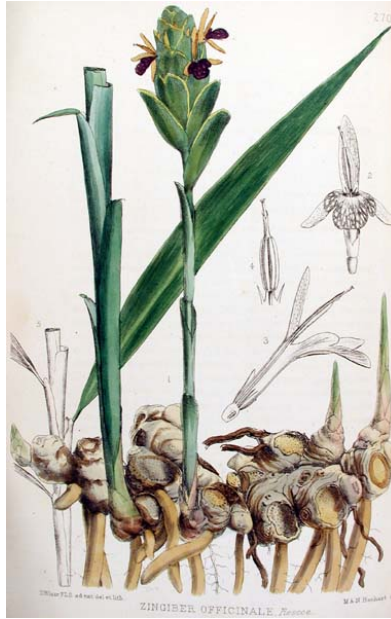
Following the Crusades in Europe, disease and plagues were common and there was a constant search for spices that could sweeten the air. Cloves were found to have a natural antiseptic effect, and the pungent oil gave quick relief from toothache. By the 13th century, people were making pomanders (apples and oranges studded with cloves) to carry on them to ward off the plague.

Today cloves are grown in the Moluccas, Malaysia, Zanzibar and Pemba, Tanzania, Madagascar, West Indies.

Uses

Due to cloves high pungency, they must be used sparingly in cooking because too much can easily overpower a meal. In the U.S. they are used in preparing hams, stewed fruit and pickles. In Denmark they are an ingredient in pepper cake. Cloves are frequently added to exotic Arabian dishes. Cloves are used to make mulled wines and beverages in Europe and Scandinavia. Cloves are used in Indian and Asian curries and can be found in the kitchens of every continent of the world.

Ginger (*Zingiber officinale*)



Ginger (*Zingiber officinale*) is a rhizome, an underground stem of a lush-looking tropical perennial plant with erect leafy shoots about ¼ inches in diameter and it grows up to 4 feet in height. Ginger somewhat resembles a small bamboo. The ginger spice is obtained from the rhizome or root of the ginger plant.

Origins – Tropical China

Ginger is indigenous to southern China. Ginger is one of the oldest Oriental spices and an important spice for more than 3,000 years. Cultivated in the southern provinces of China and in India, it was a staple in the diet of Confucius, and Sanskrit literature records its pungent spiciness in Indian cooking. In Asia, ginger is most commonly used fresh, except in masalas and other dry spice mixtures. There are tales of a baker making the first gingerbread around 2400 BC on the isle of Rhodes, near Greece.

Dried ginger was used in Middle Eastern and European dishes because that is how it arrived via the caravan routes. The Assyrians and Babylonians used it in cooking, as did the Egyptians, Greeks, and Romans. Ginger was used as a table condiment throughout Europe by the 9th century.

Today Ginger is grown in India, China, Japan, Indonesia, Australia (Queensland), Sierra Leone, Nigeria, Jamaica, and other West Indies island and can be purchased and grown in the U.S.

Uses

In Asia, dried ginger is used in many pungent spice mixtures. In the West, it was one of the cornerstones of early spice blends and today is combined with black peppercorns, cloves and nutmeg and as pickling spices. It is an excellent flavoring for carrots, pumpkin and other winter squashes, and sweet potatoes. It is a popular baking spice for cakes and cookies, and in commerce is used for drinks such as ginger beer and ale. Fruits go well with ginger, especially bananas, pears, pineapples, and oranges, and it is good for spicing preserves. Ginger is essential to curry and masala blends, five-spice powder, and pickling spices.

Fresh ginger has many uses and ginger is also pickled and preserved. Ginger in syrup and crystallized ginger can be eaten as sweets on their own or used as flavorings for sweet sauces, ice cream, cakes, and tarts.

Nutmeg and Mace (*Myristica fragrans*)



Nutmeg and Mace (*Myristica fragrans*) – Of all the sweet spices, the strongest-tasting one, nutmeg, hares its parentage with a lesser-known pungent spice, mace. Although there are some similarities in flavor, nutmeg and mace are used in quite different ways.

Nutmeg and Mace both come from a tropical evergreen tree that grows 23-33 feet tall. The leaves are shiny and dark on top, with a pale green underside. Nutmeg trees are either male or female, and only one male tree is required to fertilize 10 female trees so they can bear fruit. Nutmeg trees become fully mature in 15 years and keep producing fruit for up to 40 years.

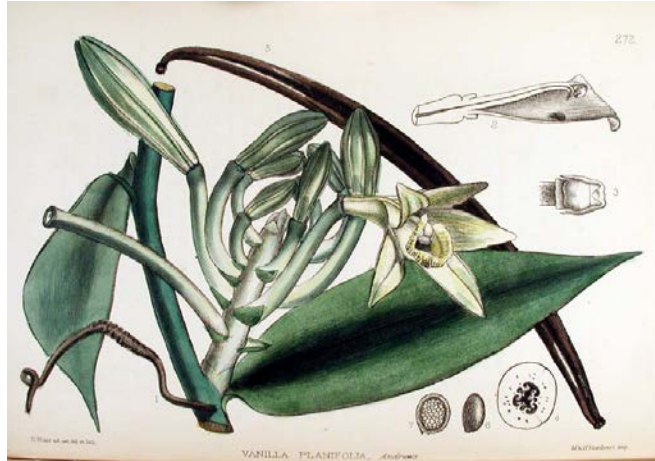
Origins – Banda Islands in the Indonesian archipelago known as the “Spice Islands,” nutmeg had reached China, Asia and India before the birth of Christ. By AD 500 nutmeg had arrived in the Mediterranean and during the Crusades moved north into Europe so that by the 13th century its use was widely known.

Nutmeg and Mace are the only spice that comes as a two for one deal. Mace is the placenta that conveys nourishment from the fruit to the seed. It clings to the shell of the nutmeg like a hand with its fingers holding so tightly that they leave little indentations to show where they’ve been on the brittle brown shell. The mace is peeled away from the nutmeg seed shell, and each is dried in the sun. Once it is dry, the nutmeg seed rattles within its smooth, mace-embossed outer shell.

Uses

At first nutmeg and mace were used as perfume and medicine and served as incense. Nutmeg has been used in old-fashioned food such as rice puddings and sprinkled over milkshakes. Nutmeg is used in cookies and cakes. Nutmeg also complements vegetables, especially root vegetables. Mace, on the other hand is more likely to be found in savory foods, such as seafood dishes, and with sauces to flavor meats such as chicken or veal. Mace is a common ingredient in hot dogs.

Vanilla (*Vanilla planifolia*)



Vanilla (*Vanilla planifolia*) is a member of the orchid family, which forms part of the largest family of flowering plants in the world, encompassing some 20,000 species. Vanilla, of which there are about 100 varieties, is one of the only species of Orchidaceae of any culinary significance. The most important variety *Vanilla planifolia*, is a tropical climbing orchid, its succulent $\frac{1}{3}$ - $\frac{3}{4}$ inch diameter stems reach 33 – 49 feet high by clinging to host trees with long aerial roots. They have slightly fragrant, pale greenish flowers with yellow-tips that average $3\frac{1}{4}$ - 4 inches in diameter. The almost cylindrical, angles 4-10 inch long capsules that follow hang in clusters and are referred to as pods or beans. When fresh they have no aroma or taste; it is the cured vanilla beans that are the source of true vanilla flavor.

Origins - Indigenous to the southeast of Mexico and parts of Central America.

The Aztecs were using vanilla before the Spanish explorers arrived. Cortes was introduced to vanilla in a drink of chocolate and vanilla sweetened with honey given by the Aztec emperor Montezuma in 1520.

The production of vanilla is an extraordinary labor-intensive process, beginning with fertilizing the flowers, which has to be done by hand to ensure a good crop. This is because the flowers are pollinated in their natural habitat by little bees of the genus *Melipona*, and there are with not enough of these bees to pollinate the vanilla flowers or the vines may be growing in regions where the bees do not exist. To complicate matters further, there is a small membrane in the vanilla flower that prevents the stigma and stamen from touching and pollinating. This requires bending the two filaments to touch using a small implement like a toothpick for every flower to ensure it produces a vanilla bean.

The successfully fertilized flowers produce pods in about six weeks. Six to nine months after pollination the green pods begin to turn yellow at the bottom tip, indicating they are ready for harvest. Harvest can take place over a three month period. Harvested beans are placed in a wood-fired kiln to start the drying and curing process. They are then put in the sun by day to absorb heat and wrapped up to sweat at night to create the vanillin. They are then stored for up to six months until they have turned a very dark brown or black and the head curer is satisfied that the curing process is complete. Once cured the natural vanilla is extracted from the bean using alcohol and water and then distilled and processed into the vanilla we know.

Uses

Vanilla essence is used to flavor ice cream, cookies, cakes, sweets and liqueurs and adds fragrance to perfumes.