

# Squash Lesson



## Goals

Students will...

- Increase their familiarity with squash.
- Eat squash when it is offered to them.
- Increase their awareness of the environmental benefits of composting.
- Increase their understanding of nutrition.

## Objectives

Students will...

- a. Explain what part of a plant squash is
- b. Explain the origin of the squash and find it on a world map
- c. Identify the growing season
- d. Identify where squash is grown in Maine
- e. Identify the six important vitamins and minerals found in squash
- f. Write a persuasive letter using the appropriate format
- g. Explain how foods with vitamin A help to keep us healthy
- h. Participate in composting activities.

## Lesson Activities

- Review points about safety, sanitation, and cooperation
- Introduce squash
- Background information on squash
- Lessons from the Farm
- Cook winter squash casserole  
(Form groups of 4 to 6 students)
- Do compost activity while food is cooking  
(See compost lesson for mini-lesson)
- Eat
- Wrap-up
- Distribute copies of recipes and challenge sheets to students
- Clean-up

## Other Squash Activities

Nutrition science lesson: Vitamin A- Where is it and why do I need it?

Global and regional mapping

Squash fact sheet, Writing ideas, Word scramble, Additional recipes

## **Background Information on Squash**



### **Did you know that...?**

#### **There are two types of squash**

Squash are classified into two basic types: winter and summer. The flavors and textures of squash vary. Some are mellow and starchy and others are sweet and creamy. The skins may be green, yellow or orange and the insides may be white, orange or yellow. Winter squash has a hard shell and the seeds and rind are generally not eaten. The seeds however, are edible and very nutritious, and contain zinc, calcium and potassium. They can be baked or roasted in the oven. Common varieties of winter squash include acorn, butternut, and buttercup. Summer squash has a softer shell, which is eaten along with the seeds. Common varieties of summer squash include zucchini, spaghetti, and crookneck.

#### **Squash are fruits**

The edible part of the squash plant is the fruit, which grows on a vine. We often eat cooked squash as a vegetable to accompany a meal, like at Thanksgiving dinner, but it is actually the fruit of the plant. Fruits can be thought of as “seed suitcases,” because they consist of a fleshy outer portion that surrounds the seeds. Squash are fruits that develop from flowers and contain the seeds of the plant. Other foods in the same family include pumpkins, gourds, watermelons, and cucumbers.

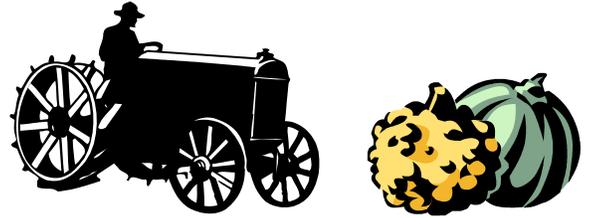
#### **Squash originated in South America**

The squash plant originated in Peru or Chile, but its cultivation had spread throughout North America by the time European settlers arrived. Squash was a common food for the Native Americans and can be dated back to 1500 BC, where it was found in cliff dwellings. The flower, or blossom, has been known to be the Hopi emblem of fertility. Now squash is grown mostly in New England, New Jersey and Florida.

#### **Squash is very nutritious**

Squash is a nutritional gold mine. It has six important vitamins and minerals including vitamin A, potassium, vitamin C, iron, calcium and fiber.

## Lessons from the Farm - Squash



When many people think of winter squash, they think of Thanksgiving, because many people have winter squash on Thanksgiving Day. However, winter squash is good to eat (you guessed it!) most of the winter.

Winter squash is very easy to grow, but it takes a lot of space. Most winter squash grows on long vines, and one plant may spread over the ground as much as 10-15 feet. Some new kinds of winter squash are “bush types” and grow only 3-6 feet wide.

Many farmers plant winter squash seeds in the ground the first week of June when the soil is warm enough to start the seeds growing. If they plant bush types, they put the seeds closer together, but the vine type rows are planted 9-12 feet apart. By the end of August, the whole field is covered with squash plants.

Farmers harvest their winter squash in September and October. Winter squash can be kept in a cool dry place long into the winter.

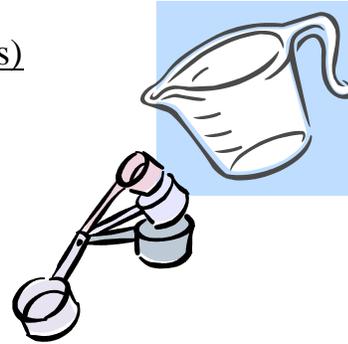
Farmers like to plant many kinds of winter squash: Butternut, Buttercup, Acorn, Golden Delicious and Blue Hubbard are examples of some of the kinds of squash that farmers raise.

Next time you go to the store, look for winter squash in the vegetable section and see if you can name some of the different kinds of winter squash that you see there.

## Materials and Preparation

### Food needed for winter squash casserole (for 4 groups)

- 4 1 lb. bags frozen, cubed butternut squash
- 8 apples
- 2 sticks butter
- 1 cup maple syrup
- 2 lemons
- 1 box raisins
- Drinks for students



### Materials needed (for 4 groups)

- 8 potholders
- 4 large spoons
- 4 mixing bowls
- 4 pots with lids
- 4 potato mashers
- 4 hand juicers
- 4 sets dry measuring cups
- 4 sets measuring spoons
- 4 liquid measuring cups
- 4 strainers
- 4 frying pans
- 4 spatulas
- 4 knives
- 4 cutting boards
- Tart tins (1 per student)
- 4 baking sheets
- Cleaning towels, napkins
- Plastic spoons and cups
- Wax paper
- Compost bucket
- Copy of recipes for each student
- Copy of squash fact sheet for each student
- Copy of writing ideas sheet for each student
- Copy of word scramble for each student
- Copy of challenge sheet for each student

## Materials and Preparation continued



Each station should have the following:

### Food

1 lb. bag frozen, cubed butternut squash  
2 apples  
1/4 cup raisins  
1/4 cup maple syrup  
1/2 lemon  
1/4 tsp. cinnamon  
1 Tbs. butter

### Materials

2 potholders  
1 large spoon  
1 mixing bowl  
1 pot with lid  
1 potato masher  
1 hand juicer  
1 cutting board  
1 knife  
1 set dry measuring cups  
1 set measuring spoons  
1 liquid measuring cup  
1 strainer  
1 frying pan  
1 spatula  
Tart tins (1 per student)  
1 baking sheet  
Plastic spoons  
Cleaning towel  
Copy of recipes

## Classroom Recipe for Winter Squash Casserole



### Ingredients:

1 lb. bag frozen, cubed winter squash or 1 winter squash, cubed  
2 apples, peeled and chopped  
1/4 cup raisins  
1/4 cup maple syrup  
1/2 lemon, juiced  
1/4 tsp. cinnamon  
1 Tbs. butter

**Use Maine squash and other ingredients from Maine whenever possible.**

### Student Cooking Activities

**Note:** This recipe requires the use of knives, ovens, and pots.

Preheat oven to 350° F.

Boil squash in large pot filled 3/4 full for 7-8 minutes or until tender.

Squeeze lemon and collect juice from 1/2 of lemon.

Peel, chop, and sauté apples in butter over medium-low heat until tender.

Add raisins, maple syrup, cinnamon, and lemon juice to apple mixture.

Sauté for a couple of minutes.

Drain squash and mash with a potato masher.

Scoop one large spoonful of squash into a small tart tin.

Add one small spoonful of sautéed apple mixture on top of the squash.

Place tins on flat baking sheet and cook 7-10 minutes at 350°F.

Allow to cool, eat and enjoy!

To sauté: Cook in open pan over constant heat, stirring continuously. The process should be quick.

Yield: 6 servings

## Nutrition Science Lesson - Squash



### Vitamin A

#### **Where is it and why do I need it?**

Draw and label the new food pyramid on the blackboard (See MyPyramid.gov). Tell students that both plant and animal foods have vitamin A. Explain that the highest levels of vitamin A from plants are found in fruits and vegetables, in the form of a substance called carotenoid, and locate those on the diagram. Have students help determine how many servings of fruits and vegetables they should eat every day. Refer to [www.fruitsandveggiesmatter.gov](http://www.fruitsandveggiesmatter.gov) and the Strawberry Nutrition Science Lesson.

A good way to remember what foods are high in vitamin A is to think of the colors of fall leaves. Vitamin A (from carotenoid) is what makes fruits and vegetables red, orange and yellow (and what gives flamingoes their color!). Ask students to name foods they think are high in vitamin A and list them on the board. Some examples include carrots, sweet potatoes, kale, mangos, spinach, apricots, cantaloupe and squash. In green leafy vegetables, chlorophyll's green pigments mask the yellow color.

Explain to students that vitamin A itself is not in plants, but that our bodies convert beta-carotene, the most common form of carotenoid, to vitamin A as needed. When the color of a fruit or vegetable is more intense, it means it has a higher beta-carotene content.

#### **The function of vitamin A in the body**

Vitamin A keeps eyes and skin healthy and helps to protect against infection by keeping the mouth, stomach, intestines, lungs, and urinary tract healthy. It assists with bone growth, reproduction, and the health of all body cells and tissues. Vitamin A helps our bodies see normally in the dark by making it easier for our eyes to adjust to lower light and at night. Eating sufficient quantities of red, yellow, and orange fruits and vegetables is important for us, but especially so in developing countries where deficiencies may lead to blindness. If our bodies do not get enough vitamin A, night blindness is one of the first symptoms; this is when it becomes more difficult to see at night or in low light, but this condition is rare in the United States.

# Squash Student Activity Sheet



Name \_\_\_\_\_

In the table below, list the vitamins and minerals found in squash.

VITAMINS	MINERALS

What other important ingredient does squash contain besides the vitamins and minerals?

\_\_\_\_\_

How does eating foods with Vitamin A help to keep us healthy? Please fill in the boxes.

<b>Eyes</b>	
<b>Bones</b>	

What is a good way to remember what foods are high in Vitamin A?

\_\_\_\_\_  
\_\_\_\_\_

## Global and Regional Mapping

### Squash



### World Map

Discuss with students the origin of squash. Have them find it on the map. Squash originated in Peru or Chile.

Squash ----- South America (60°, 10°)

### Local Harvest Calendar

Have students determine whether they think squash is grown in Maine.

Discuss when squash is harvested here in Maine:

Winter squash ----- September to October

Summer squash ----- late spring to late summer

Discuss with students methods of storing squash through the winter months (Must be kept in a cool, dry area).

Discuss why squash is available almost year round, while some vegetables are available only part of the year (squash can grow in varied climates, while other vegetables require strict conditions).

Date \_\_\_\_\_ Name \_\_\_\_\_

## Squash Fact Sheet

1. What part of the plant is squash?



2. Where did squash originally come from?

3. In what season does squash grow best?

4. What kinds of squash are grown in Maine?

## Writing Ideas - Squash



1. What did you like or dislike about this lesson?
2. Write a persuasive letter to your school's Food Service Director asking the Director to serve squash muffins at lunch. Be sure to include 3 squash facts.
3. Cook the squash recipe for your family or friends. What did they think? Did they like it? Were they surprised?
4. Come up with your own ideas...

## Squash Word Scramble

**c i h z i n c u** \_\_\_\_\_

**l o w y e l** \_\_\_\_\_

**b e r u t n t u t** \_\_\_\_\_

**m e r s u m** \_\_\_\_\_

**i t n w e r** \_\_\_\_\_

**i t r u f** \_\_\_\_\_

**n e r e g** \_\_\_\_\_

**a r o n e g** \_\_\_\_\_

**r o c a n** \_\_\_\_\_

**Squash was first grown in?**

\_\_\_\_\_

**(Answer Key on page 238)**



## Additional Squash Recipes



### Squash Soup

#### Ingredients:

5 cups cubed raw winter squash or 3 cups cooked winter squash  
2 1/2 cups water  
1 cup chopped onion  
1 Tbs. oil or butter  
1/2 cup chopped fresh parsley  
2 tsp. salt  
2-4 cups chopped spinach (optional)

#### Student Cooking Activities

Raw squash: simmer in water until tender.

Purée cooked squash by putting squash through a sieve, or manually.

Sauté onion in oil until golden. Sauté means cooking in an open pan using a small amount of fat. The process should be quick, the heat high, and the food stirred to keep in motion.

Add parsley and cook long enough to soften parsley.

Add onion mixture to squash and add salt.

Bring soup to simmer, add spinach, and cook until tender.

Yield: 7 cups

### Whipped Winter Squash

#### Ingredients

2 lbs. winter squash  
4 Tbs. butter  
1/4 tsp. nutmeg  
1/2 cup heavy cream  
pinch of salt

**Note:** This recipe requires the use of an oven.

#### Student Cooking Activities

Preheat oven to 350°F.

Cut squash in half, removing fibers and seeds. Place cut side down in baking pan.

Bake 40-50 minutes or until tender.

Scoop out pulp and add to butter, nutmeg, and cream, in mixing bowl.

Beat with electric beater until smooth. Add salt to taste.

Yield: 4 servings

## Squash Muffins

### Ingredients:

2 1/2 cups whole-wheat flour  
1 Tbs. baking powder  
1 tsp. salt  
1 tsp. ground cinnamon  
1/4 tsp. ground allspice  
1/4 tsp. ground cloves  
1 cup cooked, pureed squash  
1/2 cup vegetable oil  
2/3 cup sugar  
2 eggs  
1 cup milk  
1/2 cup chopped walnuts or raisins

**Note:** This recipe requires the use of an oven.

**Use Maine squash and other products if available.**

### Student Cooking Activities

Preheat oven to 400°F.

Oil 12 muffin tins.

Mix all dry ingredients in large bowl.

Mix all wet ingredients in medium bowl.

Add wet ingredients to dry; stir just until mixed.

Stir in nuts or raisins.

Fill muffin tins 2/3 full and bake 20 minutes or until toothpick inserted in center comes out dry.

Yield: 12 muffins

