

Harvest of the Month



Network for a Healthy California



BUTTERNUT SQUASH

Nutrition Facts

Serving Size: 1 cup, cooked, cubes (205g)

Calories 76

Calories from Fat 6

% Daily Value

Total Fat 1g 1%

Saturated Fat 0g 1%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 2mg 0%

Total Carbohydrate 18g 6%

Dietary Fiber 6g 23%

Sugars 7g

Protein 2g

Vitamin A 214% Vitamin C 33% Calcium 5% Iron 5%

Source: www.nutritiondata.com

For nutrition information in bar graph format, visit the *Educators' Corner* at www.harvestofthemonth.com.

WINTER SQUASH
October

Health and Learning Success Go Hand-in-Hand

Students who eat school lunch eat more fruits and vegetables than students who bring lunch. Studies report improved test scores and memory function among students who eat a variety of colorful fruits and vegetables and get physical activity every day. Help promote National School Lunch Week this October and use **Harvest of the Month** to encourage students to eat healthfully and be active.

Exploring California Winter Squash

Offering activities that allow students to experience fruits and vegetables using their senses engages them in the learning process and creates increased interest, awareness and support for increased consumption.

Tools:

- Three to five different winter squash varieties, whole and sliced*
- One variety per every four students
- Nutrition labels for each variety (www.nutritiondata.com)
- Dry erase board, markers

*See *What's in a Name?* on page 2 for varieties.

Sensory Exploration Activity:

- Examine squash noting color (skin and flesh), texture, sound and smell*
- Chart observations on board
- Analyze nutrition information
- Chart three highest nutrient levels
- Compare and contrast varieties
- Discuss differences in nutrient levels and how they may be related to characteristics like skin color

*Note: Tasting raw winter squash is not recommended.

For more ideas, reference:

The Power of Choice, USDA, 2003, pp. 41-51.

Cooking in Class: Spicy Apple-Filled Squash

Ingredients:

Makes 32 tastes at ¼ cup each

- 4 large winter squash (about 4 pounds)
- 8 teaspoons butter
- 4 large apples, chopped
- ¼ cup brown sugar
- 1 teaspoon cinnamon
- ½ teaspoon ground cloves
- ½ teaspoon nutmeg
- Small plates and forks

Cut squash into halves and scoop out seeds. Place in glass dish and cover with plastic wrap. Microwave on high for 5 minutes. Melt butter in separate dish. Mix in apples, sugar and spices and microwave for additional 1-2 minutes. Spoon apple filling into each squash half. Cover and microwave on high for 3-5 minutes until squash and apples are tender. Cut and serve warm.

Adapted from: *Discover the Secret to Healthy Living*, Public Health Institute, 2004.

Reasons to Eat Winter Squash

One serving of cooked winter squash provides:*

- An excellent source of Vitamin A, most in the form of beta carotene. Vitamin A is a central component for healthy vision and the antioxidant beta carotene helps fight off cancer-causing free radicals.
- An excellent source of Vitamin C and a good source of potassium.
- Six grams of dietary fiber, an excellent source for this complex carbohydrate.

*Nutrient levels are an average for winter squash varieties. Individual varieties may have more or less of certain vitamins and minerals. Do the *Exploring California Winter Squash* activity for comparative analysis.

ACORN SQUASH



October Events

- Child Health Month
- Family Health Month
- National School Lunch Week



Just the Facts

- Referred to as a vegetable in cooking, squash are actually fruits of vines of the *Cucurbita* genus.
- Native Americans believed squash seeds increased fertility and called squash “the apple of God.”
- In Native American, the word “squash” means “eaten raw” but winter squash are almost never eaten raw.
- Besides the fruit, other edible parts of squash plants include the seeds (eaten whole, toasted, ground into paste or pressed for oil); shoots, leaves and tendrils (eaten as greens); and blossoms (used for cooking and decoration).

Sources:

www.uga.edu/vegetable/squash.html
www.vegparadise.com



How Much Do I Need?

A serving of cooked winter squash is about one cup cubed. Children may not be able to eat this much. Try serving a smaller amount to help them reach their total amount of fruits and vegetables for the day.

Recommended Daily Amounts of Fruits and Vegetables*

Kids, Ages 5-12	Teens, Ages 13-18	Adults, 19+
2½ - 5 cups per day	3½ - 6½ cups per day	3½ - 6½ cups per day

*Ranges take into account three activity levels: sedentary, moderately active and active. For example, active individuals should aim to eat the higher number of cups per day. Visit www.mypyramid.gov to learn more.

Student Sleuths

- What are some nutritional benefits of winter squash? How do the nutrients vary between different color varieties?
- Search for recipes with winter squash. List the various ways squash can be prepared.
- Go to the grocery store and identify all of the different varieties of winter squash. Do a price cost comparison. What are the most and least expensive varieties?
- What are the top three squash-producing countries in the world? Hypothesize why these countries lead squash crop production.

For information, visit:

www.ers.usda.gov
www.nutritiondata.com
<http://en.wikipedia.org>



What's in a Name?

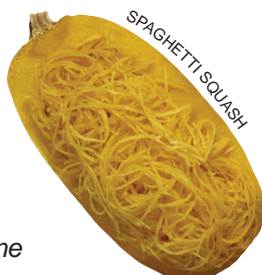
Pronunciation: wĭn-tər · skwôsh

Spanish name: calabaza

Family: Cucurbitaceae

Genus: *Cucurbita*

Species: *C. maxima* Duchesne



Squash are gourds belonging to the *Cucurbita* genus. Gourds, along with cucumbers and melons, are vine crops of the Cucurbitaceae family. The word “squash” is derived from the Native American *askutasquash* meaning “food eaten raw.”

There are two main squash varieties: winter and summer. Winter squash are not grown or harvested in winter, but picked when fully ripe and feature a hard shell (rind) with thick, inedible skin and hollow seed cavity with fully developed seeds. The thick shell allows it to be stored for several months. (Summer squash are picked immature and have a soft shell.)

The most common varieties of winter squash grown in the United States include:

- Acorn**, a smaller, acorn-shaped squash with dark green skin, deep furrows and yellow-orange flesh.
- Butternut**, a long, pear-shaped squash with tan skin and orange, sweet flesh; the most popular variety.
- Buttercup** or **Turban**, named for its “wrapped” layers, usually a dark green shell with orange, mealy flesh.
- Hubbard**, a golden or green squash notable for its bumpy, thick skin.
- Spaghetti**, a yellow-skinned squash whose flesh forms translucent spaghetti-like strands when cooked.

For more information, visit:

www.urbanext.uiuc.edu/veggies/wsquash1.html

Eat Your Colors

Fruits and vegetables come in a rainbow of colors — red, yellow/orange, white, green and blue/purple. These may lower the risk of some cancers. Winter squash can be yellow, tan (white color group) or green.

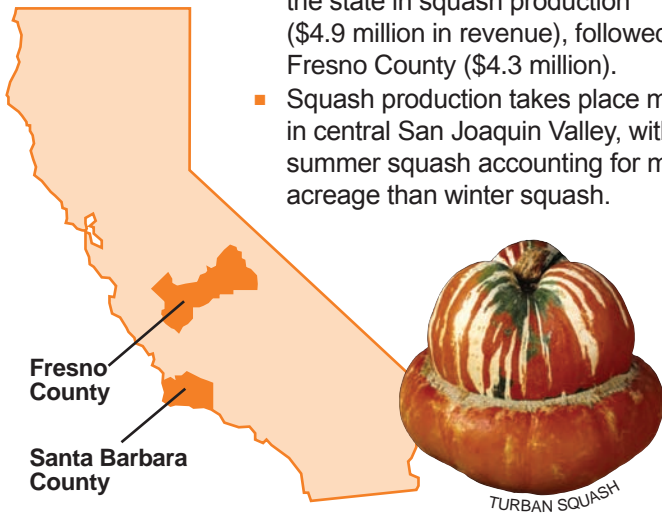
Color Group	Health Benefits	Examples of Fruits and Vegetables
Yellow/Orange	Help maintain heart health, vision health and healthy immune system	Yellow squash (delicata, spaghetti, calabaza), sweet potatoes, yellow figs, persimmons, cantaloupes
White/Tan/Brown	Help maintain heart health and cholesterol levels that are already healthy	Tan squash (butternut, banana, Mediterranean), garlic, jicama, kohlrabi, ginger, dates, brown pears, alfalfa sprouts, taro root
Green	Help maintain vision health and strong bones and teeth	Green squash (acorn, kabocha/ Japanese, buttercup), okra, green peppers, kiwis, avocados

For more information, visit:

www.fruitsandveggiesmatter.gov

Home Grown Facts

- California leads the nation in total squash production (20%), followed by Florida (18%), Michigan (17%) and Georgia (15%).
- California ranks third behind Michigan and Oregon in production of squash for processing (15% of total squash acreage).
- In 2002, squash were grown on 4,340 acres in California at a value of \$18.4 million. Santa Barbara County leads the state in squash production (\$4.9 million in revenue), followed by Fresno County (\$4.3 million).
 - Squash production takes place mostly in central San Joaquin Valley, with summer squash accounting for more acreage than winter squash.



For more information, visit:
www.ers.usda.gov/Briefing/Vegetables/vegpdf/SquashHigh.pdf

A Taste of Squash History

- Gourds, cucumbers and melons are all part of the Cucurbit Family, but all have different origins. Squash and pumpkins are native to the Americas, while cucumbers originated in eastern Asia and melons in Africa or Persia.
- Squash are one of the oldest cultivated crops in the Western Hemisphere. Seeds found in Mexico have been dated to 8,000 B.C.E.
- Squash were originally cultivated for their seeds, as early varieties did not contain much flesh and were very bitter.
- Squash were one of the “Three Sisters” planted by the Iroquois. The Iroquois myth describes three sisters that were inseparable. These plants — squash, maize (corn) and beans — were staples of nearly every Native American tribe.
- Winter squash first migrated to Europe from Peru by Spanish Explorer Francisco Pizarro in the early 16th century. Many Europeans referred to squash as “melons.”
- Winter squash became a staple food of early colonists and eventually traveled West with Americans, producing better crops in warmer states like California.

For more information, reference:
www.uga.edu/vegetable/squash.html
Growing Vegetables California Style, Marsha Prillwitz, 1988.

Adventurous Activities

- Celebrate National School Lunch Week by having students write journal entries every day of what they ate for lunch. Have students monitor how they feel (e.g., tired, energetic, etc.). Use the NutritionData® Custom Data Entry tool to complete a nutrient analysis of their lunches (www.nutritiondata.com). Compare journal entries between school lunches and lunches from home.

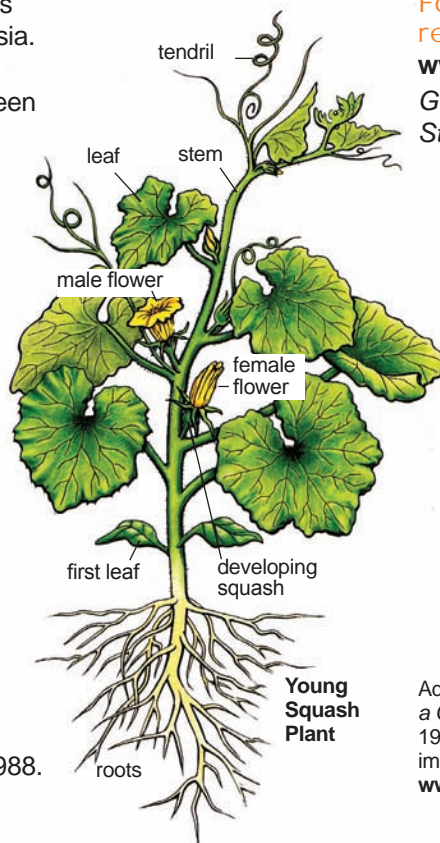
For more activities, visit the Educators' Corner at:
www.harvestofthemonth.com

How Does Winter Squash Grow?

Winter squash are warm-weather plants requiring pollination for fruit development. Until recently, squash plants were grown exclusively on vines. Today, more growers are using a hybridized, compact “bush” variety that allows for more plants per acre.

	Vine and Bush Squash
Temperature	70-90 F (sensitive to frost)
Preferred soil	Rich, sandy loam soil, well drained, heavy fertilization (or added compost)
Exposure	Full sun with steady water supply
Planting	Seeds on hills or raised beds (6 to 10 feet apart, 4 to 6 seeds per hill)
Flowers	Multiple male blossoms on long stems; few females, swollen at base of plant
Pollination	Bees transfer pollen from male to female blossoms; USDA recommends one hive per acre
Harvesting	Occurs at mature fruit stage, usually 80 to 100 days after planting (typically in fall months)

For more information, reference:
www.kidsgardening.com
Growing Vegetables California Style, Marsha Prillwitz, 1988.



Adapted from: *Hot as a Pepper, Cool as a Cucumber*, Meredith Sayles Hughes, 1999. To download reproducible botanical images, visit the Educators' Corner at www.harvestofthemonth.com.

Physical Activity Corner

California's new Physical Education Content Standards emphasize educating students on the importance of a healthy lifestyle that includes nutritious foods and regular physical activity. Help enforce this message in the classroom. Demonstrate how being active is not limited to doing outdoor activities or organized sports.

Grocery Shopping

Materials:

- One sheet paper per every two students
- Six poster boards (or construction paper)
- Old magazines and newspapers
- Scissors and glue or tape

Set-up:

- Review the Food Guide Pyramid as a class (www.mypyramid.gov)
- Cut and paste examples of each food group onto poster boards (use newspapers/magazines, one board per food group)
- Place boards in six areas around classroom

Student Pair Activity:

- “Shop” the food groups choosing one item at a time to plan a day’s meals
- Write down menus for each meal
- Share menus with class
- Discuss which meals are the most nutritious

Adapted from: www.ncpe4me.com

School Garden: Plant Parts We Eat

Squash plants have many edible parts including the fruits, leaves, flowers and seeds. There are many other plants that have multiple edible parts including beets, apples and stone fruit. Some plants have edible fruit but poisonous leaves, like tomatoes. Use the CDE *Fruits and Vegetable Photo Cards* and school garden to help students learn and understand the plant parts we eat — roots, stems, leaves, fruits, flowers and seeds.

- Assign a plant part to groups of students
- Have groups research and report on assigned part, including examples
- Visit school garden and have students identify plants and their edible parts

Adapted from: *Nutrition to Grow On*, CDE, 2001, pp. 10–17.

For more ideas, reference:

Botany on Your Plate, The Regents of University of California, 2005.

Cafeteria Connections

Winter squash are available in many varieties. Butternut, acorn and spaghetti are most common, but there are others students may not be as familiar with such as banana and kabocha. Help students taste and learn about different varieties.

- Set up a “Winter Squash” display in cafeteria. Label each variety and provide the nutrition information. Work with a class doing *Exploring California Winter Squash* activity to help make the labels.
- Organize a “Squash Naming” contest. Display a number of winter squash and post the variety names above in scrambled order. Ask students to match the name with the correct variety.

For more ideas, reference:

Fruits and Vegetables Galore, USDA, 2004.

Student Advocates

- Invite older students to work with younger students to plant a “Three Sisters” garden plot (squash, corn, beans) at school or in a community garden. Enlist help of neighbors, family and friends.
- Using the knowledge they have gained about nutrition, have students find healthy recipes featuring winter squash. Encourage students to visit local grocery stores and provide them with these recipes to promote as “school specials.” Students can offer to include special artwork to help the store show patrons how they are supporting a local school.

For more ideas, visit:

www.schoolnutrition.org

Literature Links

- **Elementary:** *Carlos and the Squash Plant* (bilingual) by Jan Romero Stevens and *In the Three Sisters Garden* by Joanne Dennee.
- **Secondary:** *Squashed* by Joan Bauer and *The Legend of Sleepy Hollow* by Washington Irving.

For more ideas, visit:

www.cfaitc.org/Bookshelf/Bookshelf.php



Next Month: Persimmons

