Fruit & Vegetable Nutrition Facts

DEPARTMENT OF EDUCATION
STATE OF IDAHO

A

Apple
Apple - Granny Smith
Apple - Lady
Apple - McIntosh
Asparagus

B

Banana
Berries
Blackberries
Blood Orange
Blood Orange 2
Beets
Bok Choy
Broccoli
Brussel Sprouts

C

Cantaloupe
Cherries
Citrus Fruit
Cabbage
Carrots
Carrots - Rainbow
Cauliflower - Colored
Cauliflower - White
Chayote Squash
Corn
Cucumber

D

Daikon Radish

G

Galia Melon
Grapefruit
Grapes
Green Bean

J

Jicama
Jicama 2

L

Lettuce

K

Kiwi
Kumquat

M

Mango
Mushrooms

N

Nectarine

O

Orange - Clementines
Orange - Mandarin
Orange - Murcott

P

Papaya
Peach
Pear - Bartlett
Pear-Bosc
Pear - Forelle
Pear - Red Anjou
Persimmon
Parsnip
Parsnip 2
Pepper - Bell
Pepper - Bell 2
Potato
Potatoes - Colored

R

Radishes
Romanesco
Romanesco - Picture
Rutabaga

S

Strawberries
Strawberries 2
Snow Peas
Sweet Potatoes
Sweet Potatoes 2

T

Tangelo
Tomato
Tomato - Cherry
Tomato - Pear

U

Ugli Fruit

W

Watermelon
Winter Squash

Z

Zucchini

McIntosh (apple)

Malus domestica (McIntosh)
McIntosh on a tree
Hybrid parentage
Unknown
Cultivar
McIntosh
Origin

The **McIntosh Red** (or **McIntosh**; colloquially, **the Mac**) is an apple cultivar with red and green skin, a tart flavor, and tender white flesh. It ripens in late September. It is traditionally the most popular cultivar in Eastern Canada and New England, well known for the pink applesauce unpeeled McIntoshes make. It is also well-suited for cider and pies. It is common to find this cultivar packed in children's lunches in North America owing to its small to medium size and longstanding reputation as a healthy snack.[*original research?*]

Every McIntosh apple has a direct lineage to a single tree discovered in 1811 by John McIntosh on his farm in Dundela, a hamlet near Morrisburg, in Dundas County, Ontario, Canada. He discovered the tree as one of 20 apple seedlings while clearing the farm, which he had just purchased. He transplanted the seedlings, cultivated them, and only one of them was still alive by 1830. The surviving apple tree lived until 1906.

A McIntosh as bought, showing colouring

The Snow Apple, also known as the Fameuse, is believed to be a parent of the McIntosh. Offspring of the Mac include, among many others, the firmer Macoun (a Jersey Black cross), the Spartan (recorded as a Newtown Pippin cross), the Cortland, the Empire, the Jonamac, the Jersey Mac and possibly the Paula Red.

William Tyrrell Macoun of the Central Experimental Farm in Ottawa is credited with popularizing this variety of apple in Canada.

The McIntosh was the source of the name of Apple's Macintosh computer.[1]

In a 1965 episode of *Get Smart* titled "Too Many Chiefs", KAOS impersonator Alexei Sebastian, pretending to be the Chief, tricks Maxwell Smart with a false new code sign: "I say Apples and you say McIntosh." [2]

In the TV show "My Little Pony: Friendship is Magic" there is a character named "Big Macintosh".

Granny Smith Apple

Scientific Binomial Name: Malus domestica

The Granny Smith apple gets its name from its founder, Mrs. Mary Ann (Granny) Smith. Granny Smith apples are crisp, juicy, and tart which makes them perfect for either baking in pies, stewed in sauces or eating out of hand. They're also great in salads because once cut, they keep their color longer than other apples.

Selection Information

Usage: Very good for eating fresh, cooking & salads. They're also the primary ingredient for a Granny Smith Apple pie.

Selection: A Good-quality Granny Smith apple will be firm with smooth and clean skin. Granny Smith apples are a deep green with an occasional pink blush of the cheeks. Test the firmness of the apple by holding it in the palm of your hand. (Do not push with your thumb). It should feel solid and heavy, not soft and light. These apples may be less attractive, but the flesh is still good to eat after cutting.

Storage: To store, keep apples as cold as possible in the refrigerator. Apples do not freeze until the temperature drops to 28.5°F.

Avoid: Avoid product with soft or dark spots. Also if the apple skin wrinkles when you rub your thumb across it, the apple has probably been in cold storage too long or has not been kept cool. Grannies occasionally show "russeting," a brownish network at the stem end.

Seasonal Information

Fresh Granny Smith Apples are available from Washington from September through November while cold storage product is available the rest of the year.

Granny Smith Apple Nutritional Information

Serving Size: 1 medium apple (154g)

Amount Per Serving	
Calories 80	**Calories from Fat** 0
	% Daily Value*
Total Fat 0	0%
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 22g	7%
Dietary Fiber 5g	
Sugars 17g	
Protein 0g	
Vitamin A 2%	Vitamin C 20%
Calcium 2%	Iron 2%

Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Source: PMA's Labeling Facts

Granny Smith Apples are very low in Saturated Fat, Cholesterol and Sodium. They're also a good source of Dietary Fiber and Vitamin C.

Lady Apples

The Lady Apple is a very decorative apple with a flattering red blush. This apple is crisp with a sweet-tart flavor.

Ethnic/Cultural Information:

Did you know in England it is a traditional holiday custom to use this apple to decorate Christmas trees?

Geography/History:

This is a very old variety of apple, perhaps one of the oldest varieties in existence. It is said this apple was enjoyed by the early Romans!

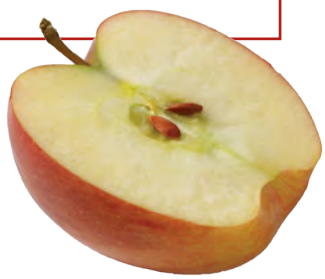
Source: www.specialtyproduce.com

Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Increasing fruit and vegetable consumption tends to increase academic performance in undernourished children. *Harvest of the Month* connects with core curricula to give students the chance to explore, taste, and learn about the importance of eating fruits and vegetables. It links the classroom, cafeteria, home, and community to help students make healthy food choices and be physically active every day.



Exploring California Apples: Taste Testing

What You Will Need (per group of 6-8 students):

- 3-5 apples (each in a different variety*), sliced**
- Graph paper and colored pencils

*Refer to *Home Grown Facts* on page 3 for varieties.
**To prevent browning, keep sliced apples in 100% apple juice until start of activity.

Activity:

- Observe, touch, smell, and taste each apple variety.
- Develop a color graph using appearance, texture, smell, flavor, and sound.
- Compare and contrast the varieties.

For more ideas, reference:
School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39-42.

Cooking in Class: Apple Oatmeal

Makes 36 tastes at ¼ cup each.

Ingredients:

- 3 large apples, cored
- 3 cups quick cooking oats
- ½ tablespoon ground cinnamon
- ⅜ teaspoon salt
- 5¼ cups 100% apple juice
- Small cups and spoons

1. Chop apples into bite-sized chunks.
2. Combine apple chunks, oats, cinnamon, salt, and apple juice in a large microwave-safe bowl. Cover bowl with lid or plastic wrap. Leave a little opening for steam to get out.
3. Microwave on high for 3-4 minutes, stirring once after 2 minutes.
4. Stir and let cool 1 minute before serving.

Nutrition information per serving: Calories: 52, Carbohydrate 11 g, Dietary Fiber 1 g, Protein 1 g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 0 mg, Sodium 26 mg

Adapted from: *Kids…Get Cookin'!, Network for a Healthy California—Children's Power Play! Campaign*, 2009.

Reasons to Eat Apples

- A ½ cup of sliced apples is a source of fiber. Dietary fiber is a complex carbohydrate. There are three main types of carbohydrates: starch, fiber, and sugar.*
- Eating a variety of colorful fruits and vegetables throughout the day will help you meet the recommended daily values of nutrients that your body needs to be healthy.
- Apples can be eaten in a variety of forms — as whole (fresh), unsweetened applesauce, dried apples, or 100% apple juice.

*Learn about sugar on page 2.

Champion Sources of Fiber*:

- Beans
- Blackberries
- Dates
- Peas
- Pumpkin
- Raspberries
- Whole wheat cereal
- Whole wheat bread

*Champion foods provide a good or excellent source of fiber.

Nutrition Facts

Serving Size: ½ cup apples, sliced (55g)
Calories 28 — Calories from Fat 0

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 8g	3%
Dietary Fiber 1g	5%
Sugars 6g	
Protein 0g	

Vitamin A 1% — Calcium 0%
Vitamin C 4% — Iron 0%

APPLES

What is Sugar?

- Carbohydrates are the body's main source of energy. There are three kinds of carbohydrates: starch, fiber, and sugar.
- Sugar is found only in foods of plant origin. In food, sugar is classified as either naturally occurring or added.
- Naturally occurring sugars include lactose in milk and fructose in fruit, honey, and vegetables.
- Added sugars (white, brown, powdered, and corn syrup) are originally made from sugar beets, sugar cane, corn, and grapes.
- Naturally occurring sugars (except honey) are usually found in foods along with vitamins and minerals, while added sugars provide calories and very few vitamins and minerals. Therefore, added sugars are often called empty calories.

For more information, visit:
http://food.oregonstate.edu/learn/sugar.html

How Much Do I Need?

A ½ cup of sliced apples is about one cupped handful. This is about the size of half of a small apple. The amount of fruits and vegetables each person needs depends on age, gender, and physical activity level.

Activity:
Visit **www.mypyramid.gov** and have students determine how many cups of fruits and vegetables they need to eat every day. Have students write down their goals and make a daily log for tracking how many fruits and vegetables they eat each day.

Recommended Daily Amount of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.

How Do Apples Grow?

Apple trees grow in the temperate regions of the world. Apple trees are best adapted to places where the average winter temperature is near freezing for at least two months, though many varieties can withstand winter temperatures as low as -40 F.

Apple trees are deciduous. In late spring, white blossoms appear from the tiny buds on apple tree branches for about nine days and produce pollen and nectar. Bees help to cross-pollinate the blossoms, the first step in forming an apple.

The seeds are distributed among an apple's five seed chambers, called carpels, found near the core. Seed development stimulates the apple tissue development. Apples continue to grow until late summer when they are ready to harvest and eat.

Botanical Facts

Pronunciation: ăpel
Spanish name: manzana
Family: Rosaceae
Genus: *Malus*
Species: *M. domestica*

Apples are the fruit of plants of the genus *Malus* in the family Rosaceae (rose family). Domestic or table apples are of the species *M. domestica* and are one of the most widely cultivated tree fruits.

Malus sieversii is the wild ancestor of *M. domestica*, and its trees can still be found in the mountains of Central Asia. In fact, the former capital of Kazakhstan, *Almaty*, means "father of the apple." Wild apples (common name for *M. sieversii*) resist many diseases and pests that affect domestic apples, and they are often researched and used in the development of new disease-resistant apples.

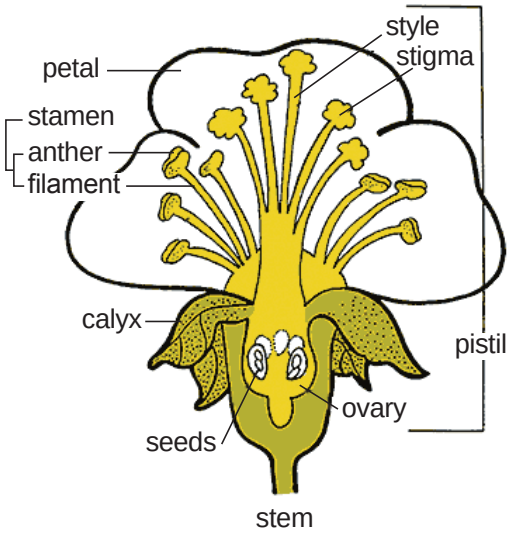
For more information, visit:
www.urbanext.uiuc.edu/apples/

A Slice of Apple History

Apples have existed for the length of recorded history and are believed to have originated in the Caucasus, a mountainous area between what are now the Black and Caspian Seas.

Through the rise of Greece, the fall of Persia and migrations to Rome and Europe, apples were cultivated and — through a process called grafting, which produces new varieties — disseminated throughout various cultures. Apples experienced surges of popularity and, at one point, some varieties were nearly lost, but were saved due to traditional orcharding by the English church.

Apple growing arose again in 15th century Renaissance Italy. Eventually, France and England followed suit, and the fruit remained popular in Europe well into the 1800s, when European settlers brought apples with them to the Americas to share the cultivation and traditions.



Apple Blossom

Source:
www.usapple.org/educators/applestore/4-6guide.pdf

Physical Activity Corner

Healthy nutrition is only one part of the equation to achieving optimal learning in the classroom; physical activity is another important part. Children need at least 60 minutes of physical activity every day to stay fit both mentally and physically. Commit to playing a different game or activity, like *Grab the Apple!*, each week in or out of the classroom.

Grab the Apple!

Objective:

Develops listening and fine motor skills (reflexes)

Equipment:

- One "apple" (foam ball or bean bag) for each pair of students
- Whistle or music

Preparation:

- Pairs sit cross-legged on floor facing each other, hands on knees
- Place box, with apple on top, between pairs
- Use START (whistle/music) cue to lead activity

Activity:

- On START cue, grab the apple before partner
- Variations:
  - Call out a specific hand to grab the apple
  - Start with hands on shoulders
  - Start in sit-up position (on back, knees bent)
  - Start in push-up position (on stomach, face down)

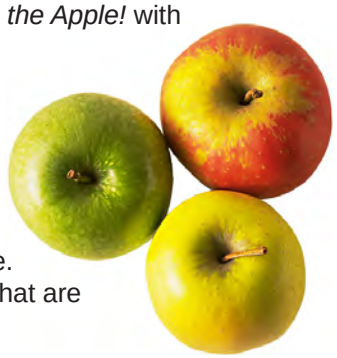
Go Farther:

Ask students to think of different starting positions to try.

Bring It Home:

Encourage students to play *Grab the Apple!* with family members.

For more ideas, visit:
www.sparkpe.org



Student Sleuths

1. Why is fiber important?
2. Apples contain natural fructose. What is natural fructose and what are its benefits?
3. Why do apples float in water?
4. What does the color of an apple's skin tell you about the environment where it was grown?
5. Map the origin of the apple and various geographical regions in California where apples are grown.
6. List the top five varieties of apples commercially produced in California and the counties that grow them.
7. Determine how much of the apples harvested in California go into processed foods/juices and how much is sold whole/fresh.

For information, visit:
www.calapples.org
www.usapple.org
www.fruitsandveggiesmatter.gov/month/apple.html

Cafeteria Connections

- Have students investigate what types of apples are used in the cafeteria. Talk with the school nutrition staff to find out why these varieties are selected. Then, write letters to the school nutrition staff promoting the benefits of locally grown apples (cost, flavor, etc.).

For more ideas, reference:
Fruits and Vegetables Galore, USDA, 2004.
www.nal.usda.gov/kids
www.agclassroom.org

School Garden: Savvy Seeds

As fall weather spells an end to some school gardens, encourage students to become seed detectives by identifying, collecting, and saving their own seeds from the garden or in the wild. Some fruits and vegetables to consider: melons, tomatoes, beans, peas, peppers, pumpkins, squash, and corn.

Class Discussion

- How do plants grow from seeds?
- What nutrients do plants need for optimal growth?
- Compare plant nutrients with the nutrients humans need. Explain why it is so important for us to eat plenty of plant foods, especially fruits and vegetables.

For more ideas, visit:
www.kidsgardening.com

Home Grown Facts

- The apple industry in California dates back to the 1800s, when two early orchards were cultivated in Watsonville and Sebastopol along the Central and Northern coastal regions. Today there are more than 450 growers.
- California ranks fifth in commercial apple production in the United States — an impressive accomplishment achieved in about 25 years of serious production.
- California is known for its variety of apples and continual production of new varieties. Examples of some California grown apples include the Red Delicious, Golden Delicious, Gala, Fuji, Granny Smith, McIntosh, Rome, Jonathon, and Pink Lady.
- California apples are harvested throughout the year and many varieties are available year-round.

For more information, visit:
www.calapples.org

Just the Facts

- About 2,500 known varieties of apples are grown in the United States and more than 7,500 are grown worldwide.
- Apples are best when eaten with the peel, as that is where most of the fiber and antioxidants are found.
- Almost one-half of all apples consumed are not in their fresh form, but rather as applesauce, apple juice, and jellies or jams. Apples can even be used to replace fat and butter in baked goods. (Replace shortening or oils in baking with an equal volume of applesauce plus one-third of the oil called for in the recipe.)

Literature Links

The Legend of Johnny Appleseed

Born September 26, 1774 in Massachusetts on the eve of the American Revolution, John Chapman became the legendary "Johnny Appleseed." He spent almost 50 years of his life in the American wilderness planting apple orchards in Illinois, Kentucky, Pennsylvania, and Ohio.

Johnny Appleseed was known as a kind and generous man. Alone, he pioneered the frontier on foot, planting apple trees, and selling them to the settlers on the plains for a few pennies each, or even clothing. Some had no cash, and from those he accepted a simple promise: to pay at a later date. Few failed to keep their word.

Chapman died in 1845, but even after 200 years, some of his trees still bear apples.

Elementary literature on the life of Johnny Appleseed:

- *The Story of Johnny Appleseed* by Aliki (Aladdin, 1987).
- *Folks Call Me Appleseed John* by Andrew Glass (Doubleday, 1995).
- *Johnny Appleseed: My Story* by David Harrison (Random House, 2001).

For book lists, visit:
www.harvestofthemonth.com
www.cfaitc.org

Adventurous Activities

Field Trip:

Take students on an apple-picking field trip or even bring the field trip to the school. For more information on Farm to School programs, visit **www.cafarmtoschool.org**.

Problem Solving:

Use apples in math equations to demonstrate addition and subtraction of fractions.

Creative Writing:

Have students interview and document their parents' favorite apple stories, memories, and recipes.

Science Investigation:

Oxidation is the browning reaction that occurs when the atoms in an apple come in contact with air and lose electrons.

- Cut two apples in half. Pour one tablespoon of lemon juice over the first half. Pour one tablespoon of water over the second half. Pour one tablespoon of apple juice over the third half. Do not pour anything over the fourth half. Leave all four halves in a visible spot in the classroom. Have students note the differences in the browning after one hour to see which method works best and why.

For more ideas, visit:
www.usapple.org/educators/applestore/index.cfm

FITNESSGRAM®

The FITNESSGRAM, a state-required Physical Fitness Test, is administered in spring for students in grades five, seven, and nine. The FITNESSGRAM is a set of tests designed to evaluate health-related fitness, with the goal of helping students establish lifetime habits of regular physical activity. Remind students that the FITNESSGRAM is not pass or fail, but the launching pad to a lifetime of health.

The FITNESSGRAM is designed to assess the three basic components of fitness:

1. aerobic capacity
2. body composition
3. muscle strength

Muscle strength is divided into four areas: abdominal strength and endurance; trunk extensor strength and flexibility; upper body strength and endurance; and overall flexibility.

Discuss with your class the importance of physical activity and encourage students to get more physical activity. Identify two activities you can do as a class regularly. Examples include:

1. Jogging outside around the track or school
2. Doing jumping jacks in class for one minute
3. Taking stretch breaks after quizzes or exams

For more information, visit:
www.cde.ca.gov/ta/tg/pf
www.cde.ca.gov/re/pn/fd/documents/pefrwk.pdf
www.cdc.gov/nccdphp/dnpa/physical/index.htm

Student Advocates

- Have students gather their favorite nutritious apple recipes.* Brainstorm ideas on how to incorporate apples into school breakfast and lunch menus. Have them meet with school nutrition staff to share their ideas.
- Ask students to note during their next trip to the grocery store where the apple displays are located. Are they in the front, back, or on the side? How many varieties do they have available?

*Visit **www.cachampionsforchange.net** for a variety of nutritious recipes.

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net.
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Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-in-Hand

A school garden is a great way to introduce students to fruits and vegetables. Research shows that students who grow their own fruits and vegetables are more likely to eat and select them at meals. Studies also show that students who eat more fruits and vegetables and get at least 60 minutes of physical activity each day perform better on standardized tests. Help your students do their best during Spring testing. Implement **Harvest of the Month** and connect to core curricula, the cafeteria, home and community.

Exploring California Asparagus

Tools:

- Green asparagus spears; harvest fresh asparagus from school garden
- One spear per student plus two additional raw spears per group
- Cutting board and knives (two per group)
- White board and pens

Sensory Exploration Activity:

- Distribute two raw spears to each student group
- Instruct students to identify and record the external parts
- Have students cut spears crosswise and lengthwise; identify and record internal structure
- Cook remaining spears (one per student) about two to five minutes in water
- Discuss changes that occur as asparagus cools (e.g., smell, color, texture)
- When cool, slice spears into thirds and have students taste the tip, center and end; record differences
- Poll students to find out if they prefer one section over another and why

For more ideas, reference:

Kids Cook Farm-Fresh Food, CDE, 2002.

Nutrition Facts

Serving Size: ½ cup asparagus, cooked (90g)

Calories 20 — Calories from Fat 2

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 13mg	1%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	7%
Sugars 1g	
Protein 2g	

Vitamin A 18% Vitamin C 12% Calcium 2% Iron 5%

Source: **www.nutritiondata.com**

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

Cooking in Class: Marinated Salad

Ingredients:

Makes 32 tastes at ¼ cup each

- 2 cups cauliflower, chopped
- 2 cups mushrooms, sliced
- 2 cups asparagus, sliced on diagonal
- 2 (14-ounce) cans artichoke hearts, drained, quartered*
- ¾ cup reduced-fat red wine vinaigrette
- 10 cups tightly packed spinach leaves

Steam or microwave cauliflower, mushrooms and asparagus until asparagus is tender-crisp. Place in medium bowl with artichoke hearts and toss with half of dressing. Tear spinach into bite-sized pieces and toss with remaining dressing in large bowl. Top with marinated vegetables and serve (warm or chilled).

*Cans packed in water.

Adapted from:
www.fruitsandveggiesmatter.gov

Reasons to Eat Asparagus

One serving of green asparagus provides:

- An excellent source of Vitamin K and folate (a B-complex vitamin).
- A good source of Vitamin C.
- A source of the antioxidants glutathione and rutin, precursors to Vitamin A.

According to the National Cancer Institute, asparagus contains more glutathione than any other fruit or vegetable. This antioxidant plays an important role in the prevention of certain cancers and diseases, nutrient metabolism and regulating DNA and protein synthesis.

For comparative nutrient information of green and white asparagus varieties, visit the *Educators' Corner* at **www.harvestofthemonth.com**.

April Events

- National Cancer Control Month
- National Garden Month
- National TV-Turnoff Week

ASPARAGUS

April

How Much Do I Need?

A serving of asparagus is about one-half cup cooked asparagus, which is about five medium spears. Remind students to eat a variety of colorful fruits and vegetables throughout the day to help reach their total daily needs.

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.

Eat Your Colors

Fruits and vegetables come in a rainbow of colors. Eat a variety of colorful fruits and vegetables every day — red, yellow/orange, white, green and blue/purple. These may lower the risk of some cancers. While white and purple asparagus varieties exist, asparagus is categorized in the green color group for its nutrient content.

Color Group	Health Benefits	Examples of Fruits and Vegetables
Green	Help maintain vision health and strong bones and teeth	Asparagus, green bell peppers, celery, chile peppers, collard greens, cucumber, dandelion greens, fennel, green tomatoes, herbs, limes, spinach, yard-long beans, zucchini

For more information, visit:

www.fruitsandveggiesmatter.gov

What's in a Name?

Pronunciation: ə-spăr'ə-gəs
Spanish name: espárrago
Family: Liliaceae
Genus: *Asparagus*
Species: *A. officinalis*

A perennial member of the Lily family, asparagus is also related to onions, leeks and garlic. Derived from the Greek word *aspharagos* meaning "sprout" or "shoot," asparagus was known as *sperage* and referred to as "sparrow grass" by English-speaking Europeans until the late 19th century.

Asparagus can be harvested in three different colors: green, white and purple. Green asparagus is most commonly grown. White asparagus is grown by burying the crowns under a foot of soil preventing photosynthesis. Purple asparagus spears turn green when cooked. While there are several varieties of each color, they are most commonly marketed by their color (e.g., *green asparagus,* etc.).

For more information, visit:

www.cfaitc.org/Commodity/pdf/Asparagus.pdf
www.ohioline.osu.edu/b826/b826_2.html

Adventurous Activities

History Exploration:

Asparagus has been cultivated for more than 2,500 years by people worldwide. It continues today to be a universal vegetable, grown and consumed in Asia, Europe, South America and North America. Have students research a historical topic of interest and then write an essay or deliver a living history presentation. Topics may include:

- Research the early beginnings of the California asparagus industry. Who were the first people to start growing asparagus? Why did growers produce more green asparagus? When and why did fresh asparagus become more common than canned or frozen asparagus?
- Research the medicinal uses of asparagus. Hypothesize why asparagus was used for these purposes.
- Choose a culture, group of people or country and research the role asparagus has played in its society or agricultural economy. Include significant recipes, holidays, medicinal uses, literature and/or economical impact.

For more ideas, visit:

www.harvestofthemonth.com

School Garden: Welcome the Birds

Birds help pollinate plants, which supports fruit and seed production. They also eat insect pests and add beauty to the garden. Providing food, shelter, water or nesting materials will engage students and encourage birds to visit. Younger students can build a birdhouse and older students can track and identify bird species that visit the garden.

Tips to Attract Birds:

- Plant long, tubular nectar flowers to attract hummingbirds
- Grow grain plants (sunflowers, amaranth, millet) to attract seed-eating birds
- Let daisy-like flowers dry out and go to seed in garden
- Set out yarn, string, animal hair/fur, pine needles and twigs as nesting materials

Tools to build a birdhouse:

- Milk carton (one per student or group of students)
- Art supplies (e.g., scissors, yarn, glue, twigs, contact papers, pens, etc.)
- 12-inch stick (for perch)
- String or wire (to hang house)
- Birdseed

Activity:

- Cut two openings on opposite sides of milk carton (2" x 3")
- Decorate cartons with yarn, twigs, pens, etc.
- Poke 12-inch stick into carton beneath both doors
- Tie string to top of carton to hang outdoor
- Fill bottom of carton with birdseed
- Observe feeders daily

Adapted from: **www.lifelab.org**

For more information, visit:

www.birds.cornell.edu/education

Student Sleuths

1. Asparagus is a source of many vitamins, including both water-soluble and fat-soluble vitamins. Make a list of water-soluble and fat-soluble vitamins. Identify the Recommended Daily Intakes (RDI) of these vitamins. How does each vitamin function in your body? What happens when your body is deficient in a certain vitamin?
2. Make a list of foods that are main sources for each vitamin. Record your food intake for one day. Determine if you are eating enough fat-soluble and water-soluble vitamins. (Hint: Use the Pantry tool available at **www.nutritiondata.com** to record your meals and assess nutrient intake.)
3. White asparagus is grown from the same crown as green asparagus. Research how farmers grow the white variety. Hypothesize what process occurs (or does not occur) to make the white variety. Identify on a map the regions that produce white asparagus. Compare and contrast nutrient values for white and green asparagus.

For information, visit:
www.cfaitc.org
www.calasparagus.com

Student Advocates

Promote National TV-Turnoff Week:

- Challenge classmates to keep the TV turned off for one week.
- Make a list of other activities you can do in place of watching TV. **Examples may include:**
  - Playing a game (soccer, basketball, softball, tag); jumping rope; dancing; gardening; walking the dog; hiking
- Encourage classmates to write journal entries of what they do in lieu of watching TV.

Celebrate National Garden Month:

- Start an after-school gardening club.
- Make arrangements with school officials to stay on campus after hours to work in the school garden.
- Talk to your neighbors about planting a community garden.

For more ideas, visit:
www.tvturnoff.org
www.nationalgardenmonth.org

How Does Asparagus Grow?

Asparagus is a long-lasting perennial plant (about 15 to 20 years) that requires about three years from time of planting to establish permanent roots and produce quality spears. The plants are most commonly grown from one-year-old crowns (an underground stem from which the spears shoot), providing a crop more quickly than if grown from seed. The edible stalks are shoots that develop into fern-like plants in warmer temperatures if uncut.

Asparagus requires a period of dormancy. This dormancy occurs naturally in California during winter when cooler temperatures inhibit plant growth. In the first year, it is essential for ferns to develop and for the spears to not be harvested in order for the roots to develop.

Temperature	Above 50 F
Soil	Well-drained, sandy loam
Planting	Trenches about 8 inches deep by 12 inches wide; rows spaced 4 to 6 feet apart
Irrigation	Well-irrigated in first year, then during fern season; avoid watering during harvest season
Harvesting	Hand-harvested when spears are 6 to 10 inches long; spears cut 1 to 2 inches below or about 2 inches above the ground

For more information, visit:
http://aggie-horticulture.tamu.edu/extension/easygardening/asparagus/asparagus.html

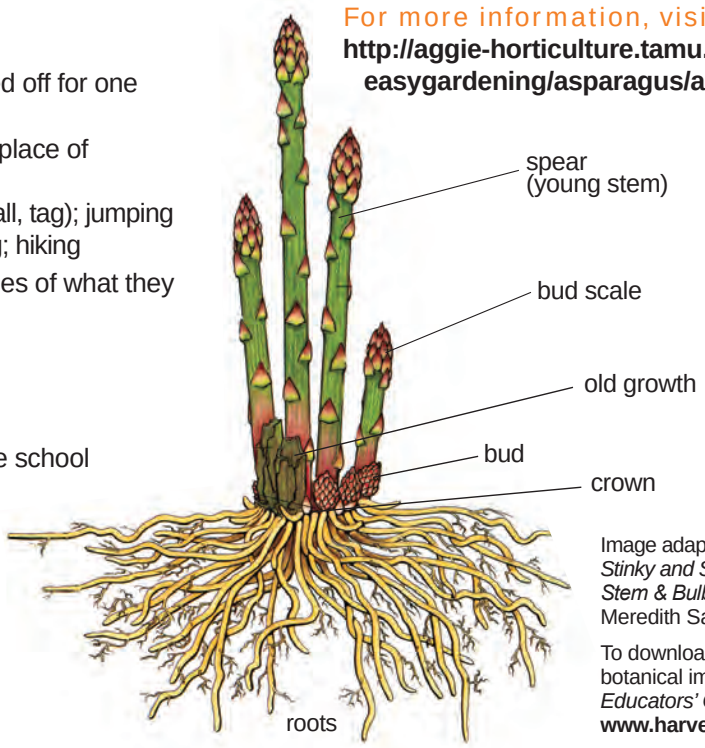

Image adapted from: *Stinky and Stringy: Stem & Bulb Vegetables,* Meredith Sayles Hughes, 1999.

To download reproducible botanical images, visit the *Educators' Corner* at **www.harvestofthemonth.com**.

Home Grown Facts

- California is the nation's leading supplier of asparagus, producing nearly half (48%) of the U.S. supply at a total value of $115 million.
- San Joaquin County produces two-fifths (40%) of the State's asparagus supply.
- Asparagus' harvest season lasts two to three months, but California's geography allows for fresh asparagus to be available from January through September.
- Other top-producing counties include Monterey (20%), Fresno (18%), Imperial (10%) and Sacramento (3%).
- Ninety-eight percent of California's asparagus crop is marketed as the fresh green variety, with the remaining 2 percent for processing or sold as the white and purple varieties.

2004 Data

For more information, visit:
www.cdfa.ca.gov/card/pdfs/7cdfaexport.pdf
www.nass.usda.gov/Statistics_by_State/

Just the Facts

- Asparagus cooks fast — Roman Emperor Augustus coined the phrase "velocius quam aspargi coquantur" which means "faster than you can cook asparagus." Over the years, this has been shortened to "in a flash."
- Per one-half cup serving, asparagus has the highest content of folate of any vegetable.
- Ancient and medieval medicinal practices used crushed asparagus tips to reduce swelling and alleviate pains associated with bee stings, wounds and infections.
- In proper conditions, asparagus can grow as much as one inch per hour — up to 12 inches in one day.

Sources:
www.fruitsandveggiesmatter.gov/month/asparagus.html
www.calasparagus.com

A Spear of Asparagus History*

- Asparagus cultivation began more than 2,500 years ago by the ancient Greeks and Romans. Asparagus was valued both as a food and for medicinal remedies.
- Early English and Dutch colonists brought asparagus to North America.
- In 1852, migrant family workers started growing asparagus in the Stockton-Sacramento Delta.
- Thomas Foon Chew built the first cannery to package green asparagus in Isleton, California in 1919.
- Beginning in the 1950s, U.S. farmers began to grow more green asparagus than white due to consumer preference.
- In the mid-1980s, fresh asparagus was shipped worldwide for the first time by airplanes from California.

*Visit the *Educators' Corner* at **www.harvestofthemonth.com** for more history.

For more information, visit:
www.cfaitc.org/Commodity/pdf/Asparagus.pdf

Literature Links

- **Elementary:** *Bugs! Bugs! Bugs!* by Bob Barner, *Earthworms: Underground Farmers* by Patricia Lauber and *Inch by Inch: The Garden Song* by David Mallett.
- **Secondary:** *Dictionary of Horticulture* by National Gardening Association, *Good Bugs for Your Garden* by Allison Starcher and *On Good Land: An Autobiography of an Urban Farm* by Michael Ableman.

For more ideas, visit:
www.cfaitc.org/Bookshelf/Bookshelf.php

Physical Activity Corner

Gardening is a great way for students to be active, practice and understand science lessons, and learn valuable life skills. Gardening uses all of the major muscle groups, increases flexibility and helps strengthen joints. Promote students' physical and mental health by celebrating National Garden Month in April. Here are some tips to get started:

- **Warm up –** Stretch for at least five minutes to keep muscles flexible and help prevent injury.
- **Mix it up –** Rotate every 15 to 20 minutes between gardening tasks like raking, weeding, pruning and digging. (Stretch briefly between chores.)
- **Color it in –** Plant a variety of colorful fruits and vegetables. Students can pick different color groups to "harvest."
- **Cool down –** End gardening session by allowing students to reflect on what they created or maintained. Students can write in journals, pick flowers, harvest crops and enjoy what they have created.

For more ideas, visit:
www.kidsgardening.com

Cafeteria Connections

Conduct an Asparagus Trivia Contest. Use this newsletter to create sets of trivia information, questions and answers. Following are a few ideas for getting started.

- Create table tents with trivia asparagus factoids.
- Place tents on cafeteria tables.
- Create trivia questions and distribute questionnaire to students in lunch line (or as students enter cafeteria).
- Students find answers while eating meal (from factoids on table tents) and enter their questionnaire into a drawing for prizes.

Helpful Hints:

- Work with older students, an academic club or science class to gather and create the trivia information.
- Use facts from this newsletter to create tent information or visit **www.calasparagus.com**.
- Ask an art class to help you design the table tents.

Adapted from: Team Nutrition, "Food Works," 1995.

Next Month: Avocados

CHAMPIONS for CHANGE
Network for a Healthy California

This material was funded by USDA's Food Stamp Program through the California Department of Public Health's *Network for a Healthy California*. These institutions are equal opportunity providers and employers. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483. © Copyright California Department of Public Health 2007.

Blood Sugar Monitor New Glucose Monitoring Device That Directly connects to the iPhone www.ibgstar.us

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Normal Blood Sugar Levels Worried About Blood Sugar? Find Out Whats Normal Today. Pebble.com

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Nutrition Facts

Banana

Dwarf Banana Plants

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Calories In A Banana

Banana Nutrition

Banana Spiders

Growing Bananas

How To Ripen Bananas

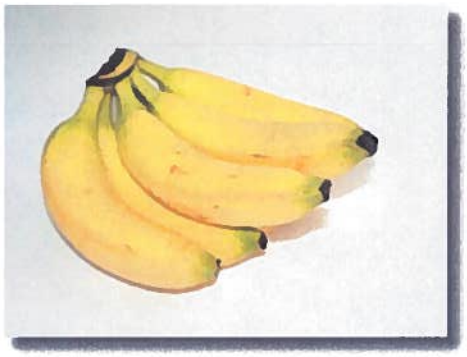
Banana Potassium

Banana Tree Care

Pictures Of Bananas

More Banana Pictures

Banana Facts - Your Online Source for Information on Bananas



Convenient Weight Loss www.Slim-Fast.com
A Clinically Proven Way To Lose Weight - Get Started Today!

1 Trick to Relieve Joints www.Instaflex.com
See How You Can Relieve Your Joints With This Fast and Easy Trick!

Medifast - Official Site www.Medifast1.com
Safely Lose Up To 2-5 lbs per Week! Healthy, Nutritious and Proven.

Nutrition Facts www.DailyHealthCentral.com
Get Up to Date Health Information. View our Health Headlines Today!

AdChoices

Banana Facts You May Not Know

Everyone knows that bananas are terrific and delicious to eat as a snack, but there are other banana facts you may not know about. What other facts linger behind that sunny yellow, smooth textured skin? This modest fruit is often taken for granted as being just another fruit in the basket; there are actually some very interesting banana facts that may make you think before you take your next bite.

Bananas are the most popular fruit import of the world. Primary importers are developed countries, while main producers are undeveloped countries. Over half of the total banana production originates from exotic, tropical areas such as Brazil and India, China and

Ecuador, although they may not necessary represent those countries leading in exporting the fruit. Ecuador and Costa Rica are leading exporters of the banana, facts supported by FAO reports. Many Caribbean countries that produce bananas, like St. Lucia and Grenada, depend largely upon the export of bananas for their economy.

The banana, facts show, comprises a large percentage of the sustenance for many developing countries. Due to the warm, humid climates of South America and Asia, bananas grow abundantly in these areas, making them a dietary staple for the people of the area. Wheat, rice, corn and bananas are included in the meal selections for many of these countries.

Odd banana facts: The small town of Gabon, Nigeria has very close proximity to the sauna-like atmosphere of the rain forest, where banana plants grow in great profusion. Oddly enough, visitors shopping within the town will be hard put to find a single banana on store shelves for purchase. The reason? Gabon has, in addition to abundant supplies of bananas, vast and rich oil reserves which are so lucrative that no one is motivated to expend the effort to harvest bananas.

Some banana facts may seem evident, yet many people are unaware of them. For instance, there are dessert bananas and cooking bananas. Dessert or sweet bananas have a high sugar count, and are high in potassium and carbohydrates while remaining low in calories, fat and sodium. Cooking bananas, or plantains, are those which have a starchy content and are prepared by boiling, frying or grinding into flour.

Australia is the only country that is self-sufficient in banana production. The tropical region of North Queensland and the sub-tropical area of New South Wales have ideal conditions for growing the fruit. There are no exports of the banana; facts show that the import of bananas is not allowed due to the quarantine regulations in place for Australia.

The next time you are preparing to bite into that sweet, white flesh, perhaps you'll think of these banana facts and marvel at the humble fruit with a long story. Or maybe not; it could be that you will simply just enjoy it.

Ads by Google Food Fun Facts Diabetes Facts War Facts Red Leaf Banana

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Harvest of the Month

Network for a Healthy California

Nutrition Facts

Serving Size: ½ cup cooked beets, sliced (85g)

Calories 37	Calories from Fat 1
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 65g	3%
Dietary Fiber 2g	7%
Sugars 7g	
Protein 1g	
Vitamin A 1%	Calcium 1%
Vitamin C 5%	Iron 4%

BEETS

Health and Learning Success Go Hand-In-Hand

Learning goes beyond the classroom. Food is something we all have in common. Studies show that learning activities involving food engage more of the senses and thus capture the attention of more students than simpler activities using textbooks or pencil and paper. Use *Harvest of the Month* to increase student learning about health and nutrition, and promote retention through hands-on practice and by teaching others.

Exploring California Beets: Taste Testing

Getting Started:

- Talk to your local store's produce manager about getting samples of fresh and canned beets for taste tests.
- Cook fresh beets in advance (roast or microwave). Sauté beet greens in olive oil with lemon.

What You Will Need (per group):

- 1 cup each of raw and cooked beets, sliced
- 1 cup of canned beets (no salt added)
- 1 cup of cooked beet greens
- Printed Nutrition Facts labels of beets (raw and cooked) and beet greens (cooked).*

*Download from **www.harvestofthemonth.com**.

Activity:

- Make a 4x5 chart labeling the columns by each of the four varieties of beets (raw, cooked, canned, greens). Label rows by the five senses.
- Examine each variety and record observations in chart. Discuss findings as a class.
- Make a Venn diagram for raw and cooked beets. Use the Nutrition Facts labels to record the similarities and differences.
- Draw another Venn diagram and repeat for cooked beets and cooked beet greens.
- Take a poll of students' favorite variety. Share results with school nutrition staff.

For more ideas, reference:
www.actionforhealthykids.org/school-programs/our-programs/game-on/

Cooking in Class: Mandarin Beet Salad

Makes 32 servings at ¼ cup each.

Ingredients:

- 4 cups canned beets, drained
- 2 cups canned mandarin oranges in 100% juice, drained (reserve ¼ cup juice)
- 2 cups of currants or raisins
- Paper plates and forks

1. Combine beets, mandarins, currants, and ¼ cup of reserved juice in a bowl. Mix well.
2. Place ¼ cup scoops on paper plates. Serve immediately or chilled.

Source: Hawthorne School District, *Network for a Healthy California,* 2009.

For nutrition information, visit:
www.harvestofthemonth.com

Reasons to Eat Beets

- A ½ cup of beets is a good source of folate and manganese. It is also a source of riboflavin.*
- A ½ cup of cooked beet greens is an excellent source of vitamin K, vitamin A, and vitamin C. It is also a good source of manganese, potassium, and riboflavin.*

*Learn about riboflavin on page 2.

Champion Sources of Riboflavin*:

- Almonds
- Cooked beet greens
- Eggs
- Fortified cereals
- Lowfat milk
- Mushrooms
- Spinach

*Provide a good or excellent source of riboflavin. Learn about riboflavin on page 2.

Source: http://lpi.oregonstate.edu/infocenter/vitamins/riboflavin/

What is Riboflavin?

- Riboflavin is also known as vitamin B_2.
- It is important for building healthy red blood cells.
- Riboflavin is a water-soluble vitamin, which means it is not stored in the body.
- Riboflavin works with other B-vitamins to help your body grow and release energy from the carbohydrates you eat.
- Riboflavin is found in whole grain cereals, mushrooms, zucchini, and lowfat yogurt. (See page 1 for other good and excellent sources.)

For more information, visit:
www.eatright.org/Public/content.aspx?id=3071&terms=riboflavin

How Much Do I Need?

A ½ cup of beets is about the size of one small beet. This is about the size of one cupped handful. Beets are sold fresh, canned, and pickled. The amount of fruits and vegetables you need depends on your age, gender, and physical activity level. All forms count toward your recommended daily amounts! Have students find out how many cups they should aim to eat each day and write down ways for how they plan to reach their goals.

Recommended Daily Amounts of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.

How Do Beets Grow?

Beets are a cool-season, herbaceous plant grown either as an annual or biennial crop. Most varieties are frost-hardy, but cannot endure extreme heat. In California, the first plantings occur in March and continue until late June.

Beets prefer deep, well-drained soils and have a large root system that extends down to three feet or more. Depending on use, they are generally picked in 40 to 60 days (small, table beets), 60 to 70 days (round, cooking beets), or 70 to 80 days (processing beets) after planting.

Growing beets adds minerals to the soil, as the leaves are made up of 25% magnesium, which is great for compost piles. Beets do well when planted with onions, cooking greens (kohlrabi), radishes, turnips, and garlic. Plant beets where legumes previously grew (except runner or pole beans) because the soil is rich in nitrogen that beets need to grow.

Visit **www.harvestofthemonth.com** to download a reproducible botanical image and a growing chart for beets.

For more information, visit:
http://aggie-horticulture.tamu.edu
www.anrcatalog.ucdavis.edu/pdf/8096.pdf

Botanical Facts

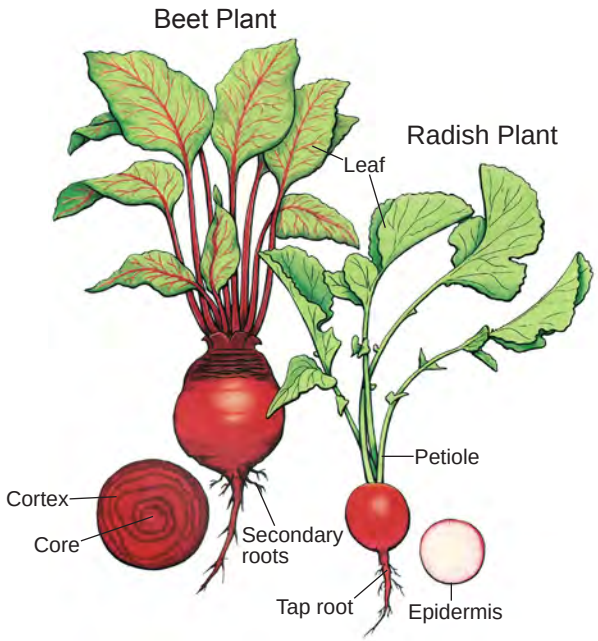
Pronunciation: ‘bēt
Spanish name: betabel
Family: Chenopodiaceae
Genus: *Beta*
Species: *Beta vulgaris*

Beets are a root vegetable of the Chenopodiace, or Goosefoot family. The *Beta vulgaris* species includes beets (table beets, processing beets, and novelty beets), chard, mangel-wurzels, and sugar beets. Beets contain a pigment called *betacyanin* that gives them their deep, red color. The beet, like its cousin the turnip, is known for its edible leaves and roots.

Chard varieties include Swiss chard, leaf beet, spinach beet, silver beet, seakale beet, and white beet. Chard produces broad leaves rather than a large round root, and only the leaves are edible. Sugar beets contain a natural sugar called *sucrose* and contain twice the amount of sugar as table beets. They provide about one-third of the world’s table sugar supply. Mangel-wurzels are used for livestock feed.

Beet types	Shape and color	Varieties
Table beets	Round; primarily red	Detroit Stains, Ruby Queen, Red Ace F1, Crosby’s Greentop, Winter Keeper
Processing beets	Cylindrical; mostly red and purple	Detroit Short Top, Ruby Ball, Scarlet Supreme
Novelty beets	Elongated, round, and/or cylindrical; Striped, red, yellow, or white	Cylindra, Forono, Chiaggia, Burpee Golden, Showhite, Albino

For more information, visit:
www.anrcatalog.ucdavis.edu/pdf/8096.pdf



School Garden

Winter Gardening Tips

- Clean excess debris from vegetable beds to promote plant health and reduce pests.
- Practice composting to replenish soil nutrients for the next growing season. Visit **http://web.extension.uiuc.edu/homecompost/methods.html#5** to learn how.
- Plant cover crops to help add organic material to the soil. Legumes will also fix nitrogen* in the soil. (Hint: Plant these early to last throughout winter.)

*Refer to *Dried Beans* newsletter for more information about nitrogen fixing.

For more ideas, visit:
www.csgn.org

Home Grown Facts

- Beets are grown commercially in 31 states and California is the nation's largest supplier.
- San Benito and San Bernardino are the highest producing counties of table beets, providing more than half of the state's supply.
- Sugar beets are primarily grown in these five counties: Imperial, Fresno, Kern, Merced, and Kings. Imperial County produces almost half of the state's supply.

For more information, visit:
www.nass.usda.gov
www.cdfa.ca.gov

Student Advocates

Students can complete these activities to become an advocate for preventing foodborne illnesses.

- Research food handling and safety techniques.
- Write editorials to local newspapers on preventing foodborne illnesses.
- Create flyers or posters to encourage hand washing and proper food handling. Post in the school cafeteria and restrooms.
- Complete activities in *Food Safety: From Farm to Fork* (California Foundation for Agriculture in the Classroom, 2009).*

*Download from **www.cfaitc.org/FoodSafety/pdf/FoodSafety.pdf**.

Adapted from: www.cfaitc.org

For more ideas, reference:
www.fightbac.org

Student Sleuths

1. What is riboflavin? How does it work in our bodies? What happens when you get too much riboflavin? Too little? Make a list of good and excellent sources of riboflavin. From that list, make a plan for how you will get your daily recommended amount of riboflavin.
2. A ½ cup of cooked or raw beets is a good source of folate. Describe what folate does for our bodies. Why do we need to get folate from the foods we eat? Make a list of foods that provide an excellent source of folate. Set goals for how you can include folate in your meals.
3. Which parts of the beet plant are edible (root, stem, seed, fruit, leaf)? Draw a picture of a beet plant and label the edible parts. Make a list of other fruits and vegetables that have more than one edible part.

For information, visit:
www.cfaitc.org/wegarden/pdf/EatYourPlants.pdf

A Slice of Beet History

- The wild beet is believed to have descended from the seabeet (*Beta maritima*) and originated in the Mediterranean. It has been cultivated since about the third century.
- The leaves were used for medicinal purposes, and then later as a potherb.
- Romans were some of the first to cultivate and develop beets for their roots and used them for feeding animals. Greeks were the first to consume both roots and leaves.
- The sugar beet (or "white beet") was developed in the 18th century and, in the early 1800s, the French began extracting the sugar.
- Colonists brought red and sugar beets to America in the 19th century.

For more information, visit:
Growing Vegetables California Style by Marsha Prillwitz, 1988.
http://food.oregonstate.edu/glossary/b/betavul.html

Literature Links

Work with your librarian to host a fictional writing contest around the theme: *My Life as a Fruit or Vegetable.*

Student Activity:

- Write a creative story about life as a fruit or vegetable and the adventure from farm to table. Select a fruit or vegetable to be the main character of the story.
- Think about aspects of growth and production from the perspective of the fruit or vegetable, such as: how am I planted, where am I grown and why, how am I harvested, what good things (nutrients) can I offer, and how am I eaten?
- Read stories aloud in class.
- Display stories in library.

Adapted from: www.cfaitc.org/wegarden/pdf/MyLifeAsAFruitOrVegetable.pdf

For a list of book ideas, visit:
www.harvestofthemonth.com

Adventurous Activities

Nutrition Investigation:

Healthy Snacks, Healthy Choices

Materials:

- Display board
- Variety of student snacks (chips, crackers, whole fruit, fruit strips, cheese, etc.)
- Handout 6.8 (page 127) from *Activities for Youth on Nutrition and Physical Activity**

Activity:

- Make a list of the top ten snacks students eat on a regular basis. Write on board.
- Make a checklist with these headings: *Low in fat?, Low in sugar?, High in fiber?, Whole grain?,* and *High in Vitamins and Minerals?*.
- Using Handout 6.8, assess the ingredients in each snack.
- Place a star next to snacks that are healthy.
- Have students write down five healthy snacks that they will try to eat on a regular basis. Encourage students to share lists with their families.

*Download from **www.fns.usda.gov/tn/Resources/EmpYouth_ch6.pdf**.

Source: *Empowering Youth with Nutrition and Physical Activity, Activities for Youth on Nutrition and Physical Activity,* Team Nutrition, USDA, CDC, 2007, p. 127.

For more ideas, visit:
www.nyaged.org/aitc/educators/lesson.htm

Cafeteria Connections

Restaurants in California are required to provide nutrition information for all menu items. Work with school nutrition staff to help students learn how to read nutrition labels and determine what is a healthy meal or snack.

- Invite school nutrition staff to explain the parts of a Nutrition Facts label.*
- Ask school nutrition staff to display Nutrition Facts labels for all produce items in the salad bar area.**
- Ask students how they would like to support the cafeteria to provide healthier menu options. Encourage students to submit ideas to school nutrition staff.

Follow-up: Complete *Adventurous Activities.*

*Use the "What's on a Label" activity (page 69) from the *School Idea & Resource Kit.* Download from **www.cdph.ca.gov/programs/cpns/Documents/Network-FV-PP-4thGradeFullKit.pdf**.

Download labels from **www.harvestofthemonth.com.

For more ideas, visit:
www.studentstakingcharge.org

Just the Facts

- The color of beet roots can range from dark purple to bright red, yellow, and white. When cut transversely, the roots show light and dark rings, sometimes alternating.
- The Chioggia beet is red and white-striped, and nicknamed the "candy cane" beet.
- Beet juice is widely used as a "natural" dye to give pink or red coloration to processed foods.
- Beets have the highest sugar content of any vegetable.
- Small beets (about a half-inch in diameter) are good for eating raw. Medium and large-sized beets are best for cooking. Very large beets (more than three inches in diameter) may be too woody for eating.

For more information, reference:
http://aggie-horticulture.tamu.edu/plantanswers/publications/vegetabletravelers/beets.html

Physical Activity Corner

There are 1,440 minutes in one day. The *Physical Activity Guidelines for Americans (Guidelines)* recommend that students get at least 60 minutes of moderate to vigorous physical activity every day. The *Guidelines* recommend engaging in the following types of activity to meet daily needs:

1. Aerobic activity
2. Muscle strengthening
3. Bone strengthening

Activity:

- Review *Guidelines** with your class.
- Have students write down how they plan to get 60 minutes of activity each day of the week.
- Have students create a worksheet to track daily activity.
- Monitor students' progress to help them meet their goals.

Helpful Hint:

Connect this activity to students' preparations for FITNESSGRAM® testing in grades 5, 7, and 9.

*Download from **www.health.gov/paguidelines**.

For more information, visit:
www.cdc.gov/physicalactivity/everyone/guidelines/children.html

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net.
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Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Family wellness impacts children at school and home. Research shows that children of families who eat together several times a week do better in school. Encourage students and parents to cook and eat healthy meals and snacks, and be physically active together. *Harvest of the Month* focuses on helping students and their families develop healthy habits.

Exploring California Berries: Taste Testing

Getting Started:

- Partner with school nutrition staff and suggest adding berries to the menu or doing lunchtime taste tests.

What You Will Need (per group):

- ¼ cup each of blueberries, blackberries, and raspberries
- Napkins and paper plates
- Printed Nutrition Facts labels for blueberries, blackberries, and raspberries*

*Download from **www.harvestofthemonth.com**.

Activity:

- Explore differences in colors, textures, shapes, smells, and tastes for each berry. Record observations in a sensory chart.
- Compare calories, vitamin C, and fiber content using the Nutrition Facts labels. Record observations.
- Report observations to class and discuss similarities and differences.
- Survey class to determine which is the favorite. Have students create a graph to show the results, then share with school nutrition staff.
- For more in-depth exploration, add frozen varieties. Discuss differences and similarities in taste and texture; research the nutrient content of frozen berries and share findings.

For more ideas, visit:
www.okfarmtoschool.com/pdf/Taste-testing-new-foods.pdf

Nutrition Facts

Serving Size: ½ cup blueberries (74g)
Calories 42 — Calories from Fat 0

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 11g	4%
Dietary Fiber 2g	7%
Sugars 7g	
Protein 1g	

Vitamin A 1% — Calcium 0%
Vitamin C 12% — Iron 1%

Cooking in Class: Banana Berry Smoothie

Makes 20 servings at ¼ cup each.

Ingredients:

- 1 large banana, peeled
- 1 cup 1% lowfat or nonfat milk
- 1 cup 100% orange juice
- 2 cups unsweetened frozen berries (strawberries, blueberries, and/or blackberries)
- 20 small cups

1. Place first three ingredients in a blender container. Put lid on tightly and blend until smooth.
2. Add frozen berries and blend again.
3. Pour immediately into cups and serve.

Adapted from: *Kids…Get Cookin', Network for a Healthy California–Children's Power Play! Campaign,* 2009.

For nutrition information, visit:
www.harvestofthemonth.com

Reasons to Eat Berries

A ½ cup of most berries is:

- A good source of vitamin C, fiber, and manganese.
- Rich in phytochemicals.

For information, visit:
www.nal.usda.gov/fnic/foodcomp/search

Phytochemical Champions*:

- Berries
- Grapefruit, limes, kiwifruit
- Onions, garlic, cauliflower
- Carrots, sweet potatoes, pumpkin
- Broccoli, collard greens
- Whole grains, nuts

*Champion foods are rich in phytochemicals.

Source: www.cafoodguide.ca.gov

BERRIES

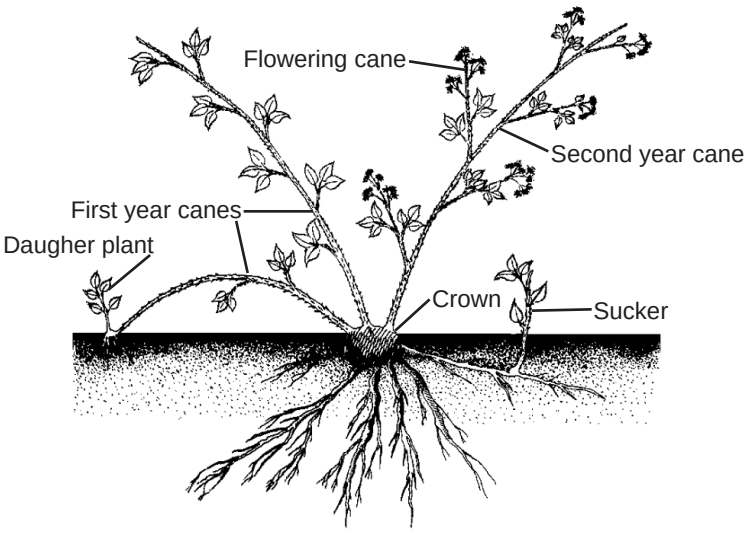
What are Phytochemicals?

- Phytochemicals (also known as phytonutrients) are naturally occurring compounds found in plants. Plants develop these chemicals to protect themselves but now research has found that these chemicals also have protective factors for humans.
- Foods that contain phytochemicals are also described as “functional” because they provide more than just nutrients.
- Phytochemicals function as antioxidants, promote immunity, increase communication with cells in the body, and help repair damage to DNA.
- Phytochemicals are grouped by their possible protective function and biochemical characteristics. They are classified as: carotenoids, phenolics, alkaloids, nitrogen-containing compounds, and organosulfur compounds.
- More than 2,000 phytochemicals are plant pigments and contribute to the variety of colorful fruits and vegetables. These include lycopene (red), anthocyanins (red, blue/purple), phenolics (blue/purple), lutein (green), indoles (green or white and from the crucifer family), beta carotene (orange), bioflavonoids (orange/yellow), and allacin/allium (mostly white members of the onion family).

For more information, visit:
www.pbhfoundation.org
http://www.ific.org/publications/factsheets/antioxidantfs.cfm

How Much Do I Need?

A ½ cup of berries is about one cupped handful. The amount of fruits and vegetables you need depends on your age, gender, and physical activity level. All forms of fruits and vegetables count toward your daily amounts – fresh, frozen, canned, dried, and 100% juice! Remind students to eat a variety of colorful fruits and vegetables throughout the day. Encourage them to set goals to help them reach their recommended daily needs.



Source: *Landcare Notes: Biological control of blackberry with blackberry leaf rust fungus,* Keith Turnbull Research Institute, State of Victoria, 1999.

Botanical Facts

Name	Blackberry	Raspberry	Blueberry
Pronunciation	'blak-ber-ē	'raz-ber-ē	'blü-'ber-ē
Spanish name	zarzamora	frambuesa	arándano
Family	Rosaceae	Rosaceae	Ericaceae
Genus	*Rubus*	*Rubus*	*Vaccinium*
Species	*Rubus fruticosus*	*Rubus idaeus*	*Vaccinium corymbosum*

Blackberries and raspberries are members of the rose family. They are called *aggregate fruits* because each berry is a cluster of tiny fruits called *drupelets*. Each drupelet has a seed. Raspberries have a hollow center when picked since the receptacle remains on the cane. Blackberry drupelets remain centered around the core even after the berry is picked. When we eat a blackberry fruit, we consume the receptacle of the inflorescence (or cluster) called a *torus*.

Blueberries are members of the heath family, which includes azaleas, rhododendrons, and cranberries. Blueberries grow wild around the world and include more than 450 species. There are three main blueberry bush types: low bush, high bush, and rabbit-eye.

For more information, visit:
www.uga.edu/fruit/rubus.html
http://edis.ifas.ufl.edu/HS104

How Do Berries Grow?

Raspberries and blackberries are perennial fruit-bearing brambles with biennial canes. The plants produce canes (“suckers”) from buds on the crown and on underground lateral stems. These canes grow during the first season and produce fruit during the summer of the second year, while new canes emerge to provide a crop for the next year. Second-year canes die shortly after fruiting. First-year canes have green stems, while second-year canes have a thin, brown bark covering them.

Blueberries are a bush-type perennial that can grow up to 12 feet tall. Harvesting is done two to five times during the season since all berries do not mature at the same time. Blueberry bushes take about two to three years to establish, with harvesting starting about the third or fourth growing season and continuing for more than 20 years.

For a chart with growing information for blueberries, blackberries, and raspberries, refer to *Berries Botanical Images* on **www.harvestofthemonth.com**.

For more information, visit:
www.uga.edu/fruit/rubus.html
http://ceventura.ucdavis.edu/Agriculture265/Blueberries.htm

School Garden: Weed Control

Weeds are unwanted in gardens because they compete with crops for light, moisture, nutrients, and space.

Activity:

1. Research weeds found in gardens. What do they look like? How can they be managed?
2. Form teams and select a garden area.
3. Spend 10 minutes looking for and gathering weeds.
4. Discuss findings as a class:
   - Identify weeds found in garden.
   - Create and implement an environmentally friendly weed control strategy.
   - Observe results. Determine if plan was successful. If not, develop a new approach and test it out.

Adapted from:
www.kidsgardening.com/Dig/DigDetail.taf?ID=1906&Type=Art

For more ideas, visit:
www.garden.org

The Seeds of Berry History

- Believed to be native to Asia, wild raspberries have been eaten since prehistoric times.
- Cultivation of raspberries began in England and France during the 1600s.
- The Evergreen blackberry is native to England and appeared in Oregon around the mid-1800s.
- The Northeast Native American tribes revered blueberries. The calyx forms the shape of a perfect five-pointed star; and the tribe's elders told how the Great Spirit sent "star berries" to relieve children's hunger during a famine.
- Colonists learned from Native Americans how to gather blueberries, dry them under the summer sun, and store them for winter.
- Native Americans, settlers, and animals all took part in bringing berries from the Northwest down to California.

For more information, reference:
Fruit and Tree Nuts, Economic Research Service, USDA, 2009.

Student Advocates

Biking is a great way to be active and healthy. It also helps the environment by reducing carbon emissions and traffic congestion. Encourage students to get involved in National Bike Month in May.

Activity:

- Research bike lanes and trails in your area. Prepare bike maps for other students and faculty. Include flyers with bike safety rules and benefits of bike riding.
- Write a letter to your Mayor or City Council about the benefits of riding bikes and the importance of having safe sidewalks and accessible bike routes in your city.
- Develop a proposal for your school to become involved in National Bike Month. Include ways to involve parents and community members.

Adapted from: www.bikeleague.org

For more information, visit:
www.bikesbelong.org

Student Sleuths

1. Raspberries are an excellent source of manganese. What is manganese and what does it do for the body?
2. Berries are a leading source of antioxidants, which neutralize free radicals in our bodies. What are free radicals and why is it important to neutralize them?
3. Blackberries and raspberries are called *aggregate fruits* with *drupelets*. What is an aggregate fruit? What are drupelets?
4. Berries are used to make jellies, jams, and sauces (e.g., strawberry jam, cranberry sauce). What is the main ingredient added to the berries to make jam or sauce? How does it change the food's nutrient profile?

For information, visit:
www.eatright.org/cps/rde/xchg/ada/hs.xsl/home_4079_ENU_HTML.htm
www.ific.org/publications/factsheets/antioxidantfs.cfm
www.uga.edu/fruit/rubus.html

Home Grown Facts

- California leads the nation in production of fresh raspberries.
- In Northern California:
  - Raspberries are harvested during May and September/October.
  - Blackberries are harvested from late July through September.
  - Blueberries are harvested in May through early August.
- In Southern California:
  - Raspberries and blackberries are harvested August through October.
  - Blueberries are harvested from mid-March through October.

Student Activity:

- Research berry varieties grown in California. Find the location of berry farms. Why do you think different berries are grown in one area versus another?
- Research berry varieties grown outside of California. Compare the distance the produce travels from outside California versus from local farms. How does this affect the environment?

For more information, visit:
www.ers.usda.gov
www.cdfa.ca.gov
www.agmrc.org

Literature Links

- Talk to your school librarian about leading an activity from the *Adventurous Activities* or *Student Sleuths* sections.
- Ask librarian to feature a book about the *Harvest of the Month* produce items every month.

For a list of book ideas, visit:
www.harvestofthemonth.com

Adventurous Activities

Blueberries get their blue pigment from a phytochemical called *anthocyanin*. The color of anthocyanins are affected by the level of acidity, or pH level, in a particular substance or food. Anthocyanins are red at low pH (indicating greater acidity) and are blue to purple at higher pH (more basic).

Materials:

- 1 pint of fresh or frozen blueberries
- ½ cup water
- ½ cup lemon juice
- ½ cup vinegar
- 1 small box of baking soda
- 3 glass jars

Activity:

1. Simmer blueberries in water over medium heat until water is deep blue.
2. Strain blueberry skins with a tea strainer.
3. Let solution cool. Pour into three jars.
4. Add lemon juice to first jar. Record color.
5. Add vinegar to second jar. Record color.
6. Add baking soda to third jar. Record color.
7. Discuss results. Based on what you know about anthocyanins, which substances added to the jars were acids? Which were bases?

Adapted from: www.umaine.edu/nsfgk-12/images/PDFs/natdye.pdf

For more ideas, visit:
www.harvestofthemonth.com

Cafeteria Connections

Team up with your school nutrition staff to develop a lunch recipe that features *Harvest of the Month* produce items. Ask students to design ads that market the new recipe to students and teachers.

Activity:

- Research the health benefits of eating the featured produce.
- Conduct market research and determine:
  - Who is your audience?
  - What do you need to know about your audience to help pitch your product to them?
  - How can you get this information?
- Develop a poster or magazine ad(s) that includes nutrition information.
- Display ads in the cafeteria.

Adapted from:
www.kidsgardening.com/Dig/DigDetail.taf?ID=2115&Type=Art

For more ideas, reference:
The Power of Advertising, School Idea & Resource Kits, Network for a Healthy California–Children's Power Play! Campaign, 2009.
www.cdph.ca.gov/programs/cpns/Pages/PowerPlayResources.aspx

Just the Facts

- Blueberries are the second most popular berry among Americans after strawberries.*
- The tayberry, loganberry, and boysenberry are hybrids of blackberries and raspberries.
- The boysenberry, a type of trailing blackberry, was cultivated in California by horticulturist Rudolph Boysen. Walter Knott began selling it at his roadside fruit stand in the mid-1930s.
- There are four colors of raspberries: gold, black, purple, and red.
- Cranberries are related to blueberries and grow on long vines in bogs and marshes.

*For more information, refer to the *Strawberries* newsletter.

For more information, visit:
www.healthylausd.net

Physical Activity Corner

Children need at least 60 minutes of physical activity daily, even 10 minutes at a time throughout the day. Do this two-minute exercise break with students to keep their minds sharp and increase cardiorespiratory endurance.

Equipment:

- 4 cones
- Stopwatch (or wristwatch with a second hand)

Activity:

- Set up four "stations" in a square shape, placing cones in the corners. Make signs to post at each station:
  1. Run in place
  2. Squat up and down
  3. Regular/modified pushups (modified = on knees)
  4. Jump up and down
- Divide students into four groups:
  - Send each group to a different cone.
  - Give them 30 seconds to complete each activity as fast as they can.
  - After 30 seconds, move clockwise to next cone by skipping, tiptoeing, taking giant steps, or running.

Helpful Hint:

Complement with *Student Advocates* activity (page 3).

For more ideas, visit:
www.sparkpe.org

This material was produced by the California Department of Public Health, *Network for a Healthy California,* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © California Department of Public Health 2010.

CHAMPIONS for CHANGE
Network for a Healthy California

Blackberries Nutrition Facts

Boise Coupons www.Groupon.com/Boise
1 ridiculously huge coupon a day. It's like doing Boise at 90% off!

Blackberry Stains www.Tide.com/StainBrain
Berry Stains Look Great On Lips, Not On Clothes - How To Remove Them

Nutrition Courses www.GCNM.com
Accredited Home-Study Programs. Quick & Easy To Follow - Free Info!

Nutrition Certification IntegrativeNutrition.com/Coaching
Passionate About Health & Wellness? Get Certified & Earn Up To $200/hr!

AdChoices

When the plant antioxidant story became public a few years ago, one of the first fruits to rise to the top of the ORAC charts was the blackberry (*Rubus ursinus*).

A member of the rose family (Rosacea) and Rubus species of brambleberries (also called "caneberries"), the blackberry has become one of Oregon's most important fruit exports. Blackberries have an exotic nature to them perpetuated by the culinary fame of the famous Marionberry, a species of blackberry first bred from two cultivars of the Evergreen blackberry in Oregon's Willamette River Valley, Marion County. Marionberries have exceptional shape, aroma and taste that make them a worldwide favorite of gourmet chefs and specialty food manufacturers, paving the way for common use of brambleberries in today's kitchens.

Drooping with drupelets of goodness

As with other Rubus species, blackberries have a unique structure that actually contributes to their nutritional value — it is an "aggregate fruit" composed of many individual drupelets, each like a small berry with one seed, surrounding a firm core called the receptacle. These individual drupelets contribute extra skin, seeds and pectin with dietary fiber value to the nutritional content of blackberries, making it among the highest fiber content plants known.

Where do blackberries grow and what characteristics do the berries have?

Blackberries grow wild and are cultivated in temperate zones from the mid-south US to near-Arctic latitudes of northern Canada and are cultivated mainly in northern US states, particularly Oregon and Washington State, and southern British Columbia. Blackberries are commercially grown on every temperate continent, including Africa and Asia.

Marionberries are the most widely cultivated blackberry specie in the world, especially favored as a popular fruit crop in many countries of Europe. Russia, Germany and Poland are major producers of blackberries. The state of Oregon harvests some 33 million pounds of blackberries each year, whereas the worldwide production is close to 1 billion pounds.

A tasty and long defensive history

The genus Rubus contains over 740 species as perennial, deciduous, woody shrubs with long vines ("brambles" up to 20 ft long) covered by firm thorns that made blackberry brambles useful as a defensive barrier along English land borders during the 16th century.

Rubus also includes roses and diverse other major fruits, including strawberries, apples, pears and peaches. While it may be difficult to see common characteristics among such diverse fruits and the blackberry, there is one important botanical similarity: the flower. All these Rubus plants typically have 5-7 white/pink petals around a central cluster of yellow stamens.

What is a "bramble" and is this the same as a "cane"?

A bramble is any plant belonging to the genus Rubus, of which the most commonly known — and enjoyed — are the red or black raspberry and blackberry, each having numerous hybrids. There are also some cross-cultivars between the red raspberry and blackberry, such as the boysenberry and loganberry.

Saying "bramble" is just a simple way to say "raspberries, blackberries, and related berry plants with thorny vines". Mainly in Oregon, these fruits are also called "caneberries" because they grow on woody bramble stems called canes.

12 Brain Boosting Foods www.doctorshealthpress.com
Learn how to increase your mental health with brain charging foods.

Food List For Diabetics dailylife.com
Start Eating Great & Healthy With A Food List For Diabetics Today!

Cherry Nutrition Facts www.Raisinets.com
Try New Cherry Raisinets® made with Dark Chocolate & Dried Cherries!

It's Here #1 Antioxidant www.bestfreeradicalsolution.com
Reduce your Free Radicals & your Oxidative Stress by 40% in 30 days

AdChoices

What is it about blackberries that consumers most like?

Known as the "cabernet" of berries for their earthy, wine-like taste, blackberries are an easy and healthy addition to anyone's diet. This fruit has multiple macronutrients — high dietary fiber (up to 20% by weight), carbohydrates, heart-healthy polyunsaturated fats (especially in its numerous chewable seeds), low overall fat content (<1%) and protein combined with high micronutrient levels of vitamins, antioxidants and minerals. Blackberries are a particularly good source of vitamin A, potassium and calcium.

Rich in antioxidant vitamins A and C

Possibly the most promising benefit from consuming blackberries is their substantial quantity of phenolic acids which are antioxidant compounds known as potent anti-carcinogenic agents, as well as having numerous other potential health benefits.

Does Your Child Suffer From:

Learning Disabilities

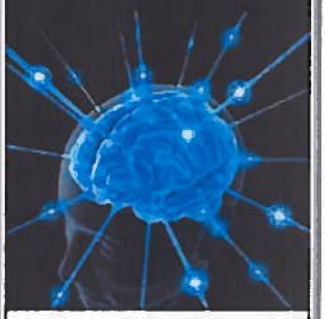
Dyslexia

Dysgraphia

Dyspraxia

Dyscalculia

We can help.
Click for information.



Edublox

Phenolics in blackberries include anthocyanins, ellagic acid, rutin, gallic acid, hydrocaffeic acid, p-coumaric acid and cinnamic acid, plus excellent contents of the antioxidant vitamins A and C.

Nutritious blackberries are a great addition to recipes or as a healthy fresh snack by the handful. Blackberries don't have to be fresh to be nutritious, as quick-frozen and canned berries retain most of the fresh fruit qualities.

Flash freezing, which is used to make IQF (immediately quick frozen) blackberries, helps trap nutrients and plant chemicals soon after harvest and provides for a healthier fruit. Increasingly seen in whole foods stores across the US and Canada, blackberries (especially Marionberries) can be purchased frozen in one pound bags year round.

What is the antioxidant strength of blackberries and what chemicals account for it?

Due to their rich contents of the phenolics mentioned above, blackberries have an ORAC value (oxygen radical absorbance capacity) of about 5350 per 100 grams, making them near the top of ORAC fruits. Cranberries and wild blueberries have around 9350 ORAC units, black raspberries about 12,000 and apples average 3100.

History of uses and folklore

Because blackberries have grown in Europe for thousands of years and were in use by native Americans when the US and Canadian West was opened, historical practices and folklore have survived on both sides of the Atlantic.

European blackberry juice was used to treat infections of the mouth and eyes until the 16th century. In the Pacific Northwest, the powdered bark of blackberry brambles was used for toothache relief. A tea made from blackberry leaves is said to aid digestion or arrest vomiting according to First Nations tribes in Washington State and British Columbia. Blackberry root concoctions have been used to remedy dysentery.

Blackberries contain relatively high quantities of ellagic acid, tannins and cyanidin glycosides. These are antioxidant phenolics that have a wide range of potential health benefits under current research.

What does medical research say about the health properties of blackberries?

The following anti-disease properties have been isolated in experimental models during studies specifically on blackberries. With their close relatives — red or black raspberry and boysenberry — medical research among all the Rubus species likely applies to one another. Accordingly, see this section in other essays on the red raspberry and black raspberry.

Although there are no clinical studies to date proving these effects below in humans, medical research shows likely benefit of regularly consuming blackberries against:

- pleurisy and lung inflammation
- anti-thrombosis (inhibition of blood clotting)
- several types of cancer

- endotoxin shock
- cardiovascular diseases
- diabetes
- age-related cognitive decline.

About The Author:
Dr. Paul Gross is a scientist and expert on cardiovascular and brain physiology. A published researcher, Gross recently completed a book on the Chinese wolfberry and has begun another on antioxidant berries. Gross is founder of Berry Health Inc, a developer of nutritional, berry-based supplements. For more information, visit http://www.berrywiseonline.com.

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Glossary References Links Contact

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Privacy Policy What's New?

Blood Orange: Nutrition . Selection . Storage

Nutrition information for blood oranges and tips on how to select, store and prepare them. Health Benefits

[All Fruits] [All Vegetables]

Did You Know...

Blood oranges are named for their deep red flesh. The red color is due to anthocyanin, an antioxidant that is found in many red fruits and veggies including berries and red potatoes.

How to Select
Choose blood oranges heavy for size without soft spots.

How to Store
Store blood oranges at room temperature for up to 1 week, or refrigerate for up to 3 weeks.

Nutrition Benefits
Fat free, cholesterol free, sodium free, an excellent source of vitamin C.

Fruit Nutrition Database
Vegetable Nutrition Database

You may also be interested in...
How to Read a Food Label
Key Nutrients Found in Fruits & Veggies
Dietary Guidelines for Americans
Fruit & Vegetable Recipe Search

Blood Orange

Now that you know many pigment colors that make fruits different...

Which pigment is in the blood orange that makes it red?

A. Lutein
B. Beta-carotene
C. Anthocyanin

Answer:

C. Anthocyanin! This is the red pigment found in red fruits' skin color.

The blood orange is typically sweeter than a regular orange. It might even taste like a raspberry inside. It is classified as a red fruit! It is found in Sicily, Italy near volcanic activity. Anthocyanin, the powerful antioxidant, protects the fruit from getting damaged by its environment. Other countries call it the ruby orange.

Which name do you like better?

Blood Orange

Or

Ruby Orange

Of course like any other orange, the number one vitamin inside is vitamin C!

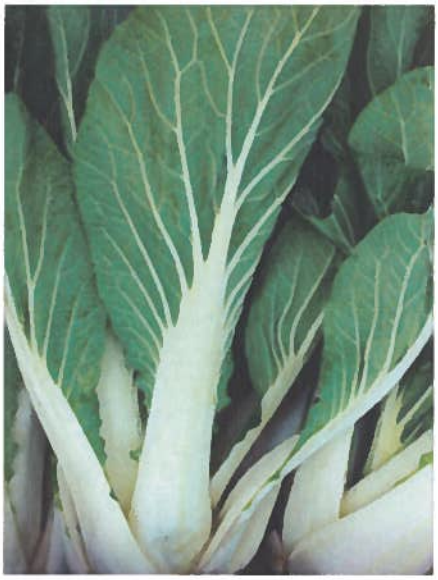
Bok Choy: Nutrition . Selection . Storage

Nutrition information for bok choy and tips on how to select, store and prepare it. Health Benefits

[All Fruits] [All Vegetables]

Did You Know...

Bok Choy is also called Chinese cabbage and pak-choi and has been grown in China for more than 6,000 years! It can be eaten raw or cooked.



SELECTION PREP

How to Select
Choose firm bok choy stalks without brown spots and fresh leaves (not wilted).

How to Store
Store bok choy in a plastic bag in the crisper section of your refrigerator for up to a week. Wash immediately before serving.

Nutrition Benefits
Fat free, saturated fat free, cholesterol free, low sodium an excellent source of vitamin A and vitamin C and a good source of folate.

Top 10 Ways to Enjoy Bok Choy

Fruit Nutrition Database
Vegetable Nutrition Database

You may also be interested in...

How to Read a Food Label
Key Nutrients Found in Fruits & Veggies
Dietary Guidelines for Americans
Fruit & Vegetable Recipe Search

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Nutrition Facts

Serving Size 1 cup shredded (70g)
Servings Per Container

Amount Per Serving	
Calories 10	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 45mg	2%
Total Carbohydrate 2g	1%
Dietary Fiber 1g	4%
Sugars 1g	
Protein 1g	

Vitamin A 60% • Vitamin C 50%
Calcium 8% • Iron 4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300 mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram
Fat 9 • Carbohydrate 4 • Protein 4

Health Benefits of Fruits & Vegetables

The natural antioxidants in fruits and vegetables will help keep your body working at its best, so consuming a diet that meets your daily recommended amount of fruits and vegetables is one of the best ways to give your body a strong defense against disease. Fruits and vegetables are protective to health as they're helpful at **reducing the risk of coronary heart disease, stroke and some cancers. They're also low in calories, which helps prevent obesity … a significant risk factor for type 2 diabetes, cancer and cardiovascular disease.**

Top 10 Reasons to Eat More Fruits and Vegetables

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Growing Healthy Students

Harvest of the Month®

February

Health and Learning Success Go Hand-in-Hand

Eating healthy can make a big difference in your child's ability to focus, understand and complete lessons in school. **Harvest of the Month** helps your family explore, taste and learn about the importance of eating more fruits and vegetables and being active every day.

The **Harvest of the Month** featured vegetable is **broccoli**

Let's Get Physical!

- It's American Heart Month. Get at least one hour of physical activity every day. Visit ***www.americanheart.org*** for more information.
- Start a weekly walking routine with your child. Invite your child's friends or neighbors to join you.
- While watching TV, challenge your child to a push-up or sit-up contest during commercial breaks.

For more physical activity ideas, visit:
www.kidnetic.com ◇ ***www.verbnow.com***

Recipe

ITALIAN BROCCOLI AND PASTA

Ingredients:
(Makes 4 servings at 1 1/4 cups per serving)
2 cups uncooked fettuccine noodles
Nonstick cooking spray
3 tablespoons chopped green onion
2 cups broccoli florets
1/2 teaspoon dried thyme
1/2 teaspoon dried or 1 1/2 teaspoons fresh oregano
1/2 teaspoon ground black pepper
1 (14 1/2-ounce) can stewed tomatoes, not drained
2 teaspoons grated parmesan cheese

1. Cook fettuccine according to package.
2. Spray a medium skillet with nonstick cooking spray. Stir-fry onion and broccoli for 3 minutes over medium heat.
3. Add seasonings and tomatoes. Simmer until heated.
4. Spoon warm vegetable mixture over fettuccine and top with parmesan cheese.

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

Produce Tips

Fresh Broccoli: Selecting, Storing and Serving

- Store broccoli unwashed in an open plastic bag in the refrigerator. It is best if used within a day or two after purchasing.
- Cook broccoli by steaming, microwaving or stir-frying. Boiling causes some of the vitamins and minerals to be lost.
- Cooked broccoli should be tender enough so that it can be pierced with a sharp knife, and still remain crisp and bright green in color.

Healthy Help

- Take your child with you to the grocery store. Ask your child to help you pick out a "rainbow" of fruits and vegetables.
- Encourage your child to eat the school meals. Ask your child's teacher or call the school district's main office for more information.
- If your child brings a lunch, pack 100% fruit juice, dried fruit or pre-cut vegetables for snacks or lunch.
- Ask questions about what your child learned in school about broccoli. Then ask what kinds of activities they did in class.

Helping Your Kids Eat Healthy

- Dice and toss raw broccoli in a salad.
- Pour lemon juice or sprinkle lowfat parmesan cheese over steamed broccoli to add and vary flavor.
- For a healthy snack, chop raw broccoli into pieces and serve with a fat-free vegetable dip. Vegetable dips can be found at most grocery stores. Or you can make your own dip with fat-free sour cream and a packet of seasoning mix.
- Add broccoli and other vegetables to soups, pastas, omelettes and casserole dishes.

For more ideas, visit:
www.harvestofthemonth.com

Nutrition Facts

Serving Size	1 cup, chopped (88g)
Amount per Serving	
Calories 30	Calories from Fat 3
	% Daily Value
Total Fat 0g	**1%**
Saturated Fat 0g	**0%**
Cholesterol 0mg	**0%**
Sodium 29mg	**1%**
Total Carbohydrate 6g	**2%**
Dietary Fiber 2g	**9%**
Sugars 1g	
Protein 2g	
Vitamin A 12%	Calcium 4%
Vitamin C 131%	Iron 4%

Source: ***www.nutritiondata.com***

nutrition NETWORK FOR HEALTHY ACTIVE FAMILIES

EAT FRUITS & VEGETABLES AND BE ACTIVE

This material was funded by USDA's Food Stamp Program through the *California Nutrition Network for Healthy, Active Families*. This institution is an equal opportunity provider and employer. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483. © Copyright California Department of Health Services 2005.

Brussels Sprouts

Brussels sprouts, is a hardy, slow-growing, long-season vegetable belonging to the cabbage family. In the proper season of the year, it can be grown with fair success in most areas of the country. In mild areas, or where there is deep snow cover, the sprouts may overwinter.

The "sprouts" (small heads that resemble miniature cabbages) are produced in the leaf axils, starting at the base of the stem and working upward. Sprouts improve in quality and grow best during cool or even lightly frosty weather. Brussels sprouts require a long growing period, though newer hybrids have greatly reduced this requirement. In all but the most northern states, summers are usually too warm for completely satisfactory production from spring plantings. Plants set out in late spring to early summer grow satisfactorily and mature high-quality sprouts when the fall weather begins to cool.

Recommended Varieties

Hybrid

Bubbles (82 days to harvest, dependable, tolerates warm weather, resistant to rust)

Jade Cross (90 days, resistant to yellows)

Jade Cross E (90 days; sprouts larger, easier to remove from stalk than with original strain)

Oliver (85 days; early; easy-to-pick, attractive sprouts)

Prince Marvel (90 days; tight; sweet sprouts)

Royal Marvel (85 days; tolerant to bottom rot and tipburn; tight sprouts; very productive)

Valiant (90 days; smooth, uniform sprouts)

Open-pollinated

Long Island Improves (90 days; variable, harder to produce heavy, uniform crop with this variety)

Rubine (105 days; red plants and sprouts; novel, but very late maturing, not nearly as productive as recommended hybrid green types).

When To Plant

Transplant in early summer to midsummer about the same time that you would plant late, long-season cabbage. The seed should be sown in a protected location in seed flats, 4 to 5 weeks before transplanting. Transplant the seedlings to the permanent garden location when space and time allow; but at least 90 to 100 days before the first frost date for your area. For summer harvest, you must plant transplants of an early, heat-resistant variety in very early spring. Sprouts maturing in hot weather or under dry conditions are more likely to develop bitterness. Fall production is the most practical and rewarding in most parts of the country.

Spacing & Depth

Space plants 24 to 36 inches apart in the row, or 24 inches in all directions in beds. Cover seeds 1/4 to 1/2 inch deep and transplant the seedlings when they are about 3 inches tall. Do not allow transplants to become stunted in the flats before transplanting.

Care

Brussels sprouts are grown much like the related cole crops, cabbage and broccoli. Apply one side -dress application of nitrogen fertilizer when the plants are 12 inches tall and water to keep the crop growing vigorously during the heat of summer. Without ample soil moisture, the crop fails. Insect control is also very important at this stage to keep the plants growing vigorously. Cultivate shallowly around the plants to prevent root damage. The sprouts form in the axils of the leaves (the space between the base of the leaf and the stem above it).

Commercial gardeners remove the leaves to accelerate harvest, but this practice is not essential in the home garden. Some gardeners believe that the sprouts develop better if the lowermost six to eight leaves are removed from the sides of the stalk as the sprouts develop. Two or three additional leaves can be removed each week, but several of the largest, healthiest, fully expanded upper leaves should always be left intact on top to continue feeding the plant. About 3 weeks before harvest, the plants may be topped (the growing point removed) to speed the completion of sprout development on the lower-stem area.

Harvesting

The small sprouts or buds form heads one to two inches in diameter. They may be picked (or cut) off the stem when they are firm and about one inch in size. The lower sprouts mature first. The lowermost leaves, if they have not been removed already, should be removed when the sprouts are harvested. Harvest sprouts before the leaves yellow.

Common Problems

Aphids, cabbage worms and diseases.

Questions & Answers

Q. Why do my sprouts remain loose tufts of leaves instead of developing into firm heads?

A. When the sprouts develop in hot weather (after spring seeding or during a warm fall), they often do not form compact heads. Use transplants for early plantings and maintain ample soil moisture. You also can cut off the top growing point when the plant reaches 24 to 36 inches in height. This practice stops leaf growth and directs the plant's energy to the developing sprouts. In addition, check the variety you have planted. The newer, faster-maturing varieties are generally more suitable for getting dependable yields.

Selection & Storage

Brussels sprouts, what an odd name for a vegetable that has the appearance of a "cute little baby" cabbage. No one seems to know where Brussels sprouts originated but it is assumed they came from Belgium where Brussels is the capital city. In parts of Europe they are also known as "Brussels cabbage", which seems appropriate since they are a subspecies of the common cabbage.

Most Americans who do not like Brussels sprouts are haunted by childhood memories of smelly, army green, bitter, mushy globs that had to be eaten before dessert. Fresh Brussels sprouts, properly cooked, are deliciously delicate in flavor. Maybe it is time to give Brussels sprouts another chance, this time with a new attitude and a modern cooking spirit.

Like cabbage and cabbage sprouts, Brussels sprouts are a cool weather crop. They should be harvested when the sprouts are small, compact and bright green. Avoid yellowing sprouts with

signs of wilt rot or insect damage. Harvest sprouts when they are no larger than 1 to 1 1/2 inches in diameter.

The fresher the sprouts, the better the flavor, so refrigerator storage should not exceed a day or two. Remove any damaged or irregular outer leaves and store fresh unwashed sprouts in plastic bags in the vegetable bin of the refrigerator.

Nutritional Value & Health Benefits

Unlike most green vegetables, Brussels sprouts are rather high in protein. Although the protein is incomplete—lacking the full spectrum of essential amino acids—a serving of whole grains will make them complete. As a member of the cabbage family Brussels sprouts are a cruciferous vegetable. Current research suggests vegetables in this group offer protection against some forms of cancer.

Nutrition Facts
(1/2 cup cooked)
Calories 30
Protein 2 grams
Carbohydrates 7 grams
Dietary Fiber 2 grams
Potassium 247 mg
Vitamin C 48 mg
Folate 47 mcg
Vitamin A 561 IU

Preparation & Serving

The key to cooking Brussels sprouts is in not overcooking them. The leaves cook faster than the core, so cut an X in the bottom of the stem for even cooking when cooking the sprouts whole. As a rule, when Brussels sprouts have lost the bright green color, they are overcooked and have lost a considerable amount of nutritional value as well. Depending on size, cooking time should not exceed 7 to 10 minutes weather you are steaming, braising or boiling. Select sprouts of even size for uniform cooking. Large sprouts should be cut in half.

Home Preservation

The best home preservation method for Brussels sprouts is freezing. As with any vegetable, Brussels sprouts will need to be blanched prior to freezing.

1. Select firm, young, tender heads. Examine heads carefully to make sure they are free from insects.
2. Trim, removing coarse outer leaves. Wash thoroughly. Sort into small, medium and large sizes.
3. Over high heat, bring one gallon of water to a rolling boil in a blanching pot. Blanch one pound of Brussels sprouts at a time. Start counting blanching time as soon as the water returns to a boil.
4. Blanch small heads 3 minutes, medium heads 4 minutes and large heads 5 minutes.
5. To cool, plunge the blanching basket of Brussels sprouts into an ice water bath. Use one pound of ice per pound of vegetables in one gallon of water.
6. Cooling should take the same amount of time as blanching, depending on the size of the heads.
7. Drain, pack into zip-closure bags or freezer containers, label and date. Freeze for up to one year at zero degrees or below.

Recipes

Braised Brussels Sprouts with Mustard Butter
Braising is an excellent method for cooking Brussels sprouts. Braising refers to cooking food with a small amount of liquid in a tightly covered pan.

1 pound small, firm, bright green Brussels sprouts
1/2 teaspoon salt
1/2 cup water
2 tablespoons melted unsalted butter or margarine
2 tablespoons Dijon mustard
Salt and freshly ground black pepper

1. Check each head, peel off any loose or discolored leaves. Using a paring knife, cut an X through the core end of each head.
2. Bring sprouts, water and salt to a boil in a 2-quart saucepan over medium-high heat. Lower heat, cover and simmer. Shake pan once or twice during braising to redistribute sprouts.
3. Cook until just tender 8 to 10 minutes. Test by piercing with a knife tip. Drain well.
4. Melt butter in a large skillet of medium heat. Whisk in mustard until smooth. Cook , stirring constantly until smooth and creamy, about 30 seconds.
5. Add sprouts to skillet, coating well with the butter mixture. Season to taste with salt and pepper and serve. Serves 3 to 4.

Cabbage Nutrition Facts

High Fructose Corn Syrup www.SweetSurprise.com/
How Much do you Know About High Fructose Corn Syrup? Find Out Here.

12 Brain Boosting Foods www.doctorshealthpress.com
Learn how to increase your mental health with brain charging foods.

Study Raw Food Nutrition IntegrativeNutrition.com/rawfoo
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AdChoices

The cabbage is a green, leafy plant that forms part of the *Brassicaceae* family. Other members of this family include broccoli, Brussels sprouts, collards, cauliflower and kale. The leafy portion of the cabbage cluster is generally the only portion of the plant that is eaten, either raw, cooked or preserved.

Cabbage is used in many popular dishes, coleslaw being the most common, which is thinly sliced strips of cabbage that is mixed with carrots or alone and includes added mayonnaise for flavor. It can also be used in soups and stews and has a very strong aroma.

There are various types of cabbage and it is estimated that there is at least a hundred different types growing around the world. Green cabbage is the most common type of cabbage, however you also get savory cabbage, napa cabbage, bok choy and red cabbage.

Green cabbage is pale green in color and has a crunchy texture. Savory cabbage has greeny-yellow leaves that have a more crinkled texture than green cabbage. Napa cabbage is plate green with white stems and crinkled leaves. Bok choy is a Chinese cabbage that has dark green leaves held loosely together and white stems, and has an almost celery type taste. Red cabbage is generally red or dark purple, however it

has a similar taste to that of green cabbage, with coarser leaves.

Cabbage is an excellent source of vitamins K and C: 1 cup (150 grams) of shredded, boiled cabbage contains 91% of the RDA for vitamin K and 50% for vitamin C. Cabbage is also a very good source of dietary fiber, manganese, vitamin B6 and folate, and a good source of thiamin, riboflavin, calcium, potassium, vitamin A, tryptophan, protein and magnesium.

A case control study published in the journal *Cancer Research* confirmed that women who eat more *Brassica* family vegetables have a much lower risk of breast cancer. In this study of over 300 women in Shanghai, China (where *Brassica* vegetables such as Chinese cabbage are frequently consumed), the women's urinary levels of isothiocyanates (a type of beneficial compound found in *Brassica* vegetables) directly correlated with their breast cancer risk. Those women with the highest isothicyanate levels (i.e., those women consuming the most *Brassica* vegetables) had a 45% lower risk for breast cancer compared to those with the lowest levels of isothiocyanates.

Cabbage's role as a staple vegetable in Polish cuisine may be why the breast cancer risk of Polish women triples after they immigrate to the U.S., rising to match that of U.S.-born women.

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Does Your Child Suffer From:

Learning Disabilities

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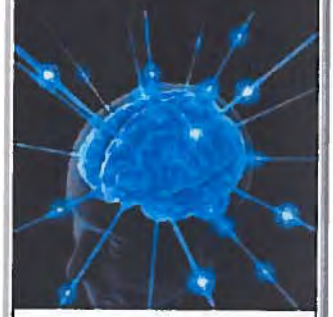

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Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-in-Hand

Farmers' markets can help students learn how food travels from the farm to the plate. They also showcase California's diversity of fresh fruits and vegetables. Studies have shown that increasing students' knowledge of fruits and vegetables may result in increased consumption. Use **Harvest of the Month** to teach students about California's farmers' markets and show them how to lead a healthy, active lifestyle. It links with core curricula and connects the classroom, cafeteria, home and community.

Exploring California Melons

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

Tools:

- Three or more different varieties of melons*
- Knives, cutting boards and serving plates (one for each group)
- Plastic food service gloves (one pair per student)
- Small plates or bowls
- Paper and pencils

*Refer to *Eat Your Colors* on page 2 for varieties.

Sensory Exploration Activity:*

- Divide class into student groups; distribute one melon variety to each group
- Observe the external look, feel and smell of melon; record observations
- Cut open fruit and note color and smell of inside; record observations
- Scoop out seeds and cube fruit; place on serving plate at head table
- Sample each melon variety; record taste differences and similarities among melons
- Share observations with class; make a graph showing the classroom favorite

Optional: Have class write letter to school food service staff letting them know about favorite melon variety and request to feature it more often on school menus.

*Consider conducting activity with *Adventurous Activities* on page 4.

For more ideas, reference:

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

Nutrition Facts

Serving Size: ½ cup cantaloupe, cubed (80g)

Calories 27	Calories from Fat 1
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 13mg	1%
Total Carbohydrate 7g	2%
Dietary Fiber 1g	3%
Sugars 6g	
Protein 1g	

Vitamin A 54% Vitamin C 49% Calcium 1% Iron 1%

Source: **www.nutritiondata.com**

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

MELONS
July

How Much Do I Need?

A serving of melons is one-half cup cubed melon. This is about the size of one cupped handful. Remind students to eat a variety of colorful fruits and vegetables throughout the day to reach their total daily needs.

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.

Cooking in Class: Rainbow Melons

Ingredients:

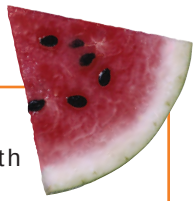
Makes 35 tastes at ⅛ cup each

- 4 cups watermelon balls or cubes
- 4 cups cantaloupe balls or cubes
- 4 cups honeydew melon balls or cubes
- Small plates and napkins

Use a melon baller to scoop melons. Serve taste of each melon variety.

For more ideas, visit:

www.cachampionsforchange.net



July Events

- National Peach Month
- Independence Day
- Therapeutic Recreation Week

Reasons to Eat Melons

Cantaloupe

Serving Size: ½ cup, cubed (80g)

Calories 27 | Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 13mg	1%
Total Carbohydrate 7g	2%
Dietary Fiber 1g	3%
Sugars 6g	
Protein 1g	

Vitamin A 54% | Calcium 1%
Vitamin C 49% | Iron 1%

Casaba Melon

Serving Size: ½ cup, cubed (85g)

Calories 24 | Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 8mg	0%
Total Carbohydrate 6g	2%
Dietary Fiber 1g	3%
Sugars 5g	
Protein 1g	

Vitamin A 0% | Calcium 1%
Vitamin C 31% | Iron 2%

Honeydew Melon

Serving Size: ½ cup, cubed (88g)

Calories 32 | Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 16mg	1%
Total Carbohydrate 8g	3%
Dietary Fiber 1g	3%
Sugars 7g	
Protein 0g	

Vitamin A 1% | Calcium 1%
Vitamin C 27% | Iron 1%

Watermelon

Serving Size: ½ cup, cubed (78g)

Calories 23 | Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 6g	2%
Dietary Fiber 0g	1%
Sugars 5g	
Protein 0g	

Vitamin A 9% | Calcium 1%
Vitamin C 10% | Iron 1%

Source: **www.nutritiondata.com**

One serving of melons may provide:

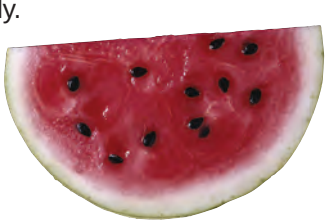
- An excellent source of Vitamin C (e.g., cantaloupe, casaba, honeydew).
- An excellent source of Vitamin A (e.g., cantaloupe).
- A source of potassium (e.g., cantaloupe, casaba, honeydew, watermelon).
- A source of Vitamin B6, folate and niacin (e.g., cantaloupe, casaba, honeydew).
- A source of lycopene (e.g., watermelon).

Potassium is an essential mineral that functions primarily in the intracellular fluid by regulating electrolyte and water balance and cell metabolism. It also plays a role in the synthesis of muscle protein from amino acids in the blood.

Student Sleuths

1. Study the Nutrition Facts labels for cantaloupe, casaba and honeydew melons. Make a list of nutrients found in each variety and write a brief sentence about the health benefits each provides to the body. Compare and contrast the nutrients for each melon. Refer to the Nutrition Facts label for watermelon. How does it compare to other melon varieties?
2. Melons are members of the gourd family. Make a list of other produce items that belong to this family. Is the melon a fruit or vegetable? Write a persuasive argument for your statement.
3. Cantaloupes were named after the Roman town of Cantalupo in Italy where they were grown in abundance. Locate this on a map and research how the ancient Romans used cantaloupes. Study how the melon has been used in other parts of the world. Sample different melon varieties with your family.

For information, visit:
www.nutritiondata.com
www.plants.usda.gov



Eat Your Colors

Fruits and vegetables come in a rainbow of colors. Eat a variety of colorful fruits and vegetables every day — red, yellow/orange, white, green and blue/purple. These may lower the risk of some cancers. Melons are found in the red, yellow/orange and green color groups.

Color Group	Health Benefits	Melon Examples
Red	Help maintain heart health, memory function and urinary tract health	Watermelon
Yellow/Orange	Help maintain heart health, vision health and healthy immune system	Cantaloupe, casaba, piel de sapo, sugar melon, yellow watermelon
Green	Help maintain vision health and strong bones and teeth	Honeydew, Crenshaw, horned melon, galia

For more information, visit:
www.fruitsandveggiesmatter.gov

Just the Facts

- On average, it takes about 10 to 15 bee visits for proper pollination to grow melons.
- By weight, the watermelon is the most common melon consumed in America, followed by the cantaloupe and honeydew melon.
- There are many varieties of the “western shipping type” cantaloupe, but since consumers cannot differentiate between them, they are marketed under the general name as “cantaloupe.”
- There are four main varieties of watermelon: allsweet, ice-box, seedless and yellow flesh.

Sources:
www.fruitsandveggiesmatter.gov/month/watermelon.html
http://anrcatalog.ucdavis.edu/pdf/7218.pdf

School Garden: Bug Hunt

Tools:

- Light-colored cloth sheet
- Magnified bug boxes or hand lenses

Activity:

- Take sheet and place under plant bush or shrub.
- Shake plant gently and carefully remove sheet.
- Use magnified bug boxes to observe bugs found on sheet; record observations.
  - **Grades K–6:** Draw and label the basic insect parts (e.g., head, thorax, abdomen).
  - **Grades 7–12:** Identify and classify insects; conduct population surveys; and/or study predator-prey relations in insect world.
- Shake sheet over plant to return bugs to their home.
- Repeat with different plant. Compare types of bugs found.

Adapted from: **www.lifelab.org**

For information, visit:

www.ipm.ucdavis.edu
www.csgn.org/curriculum.php

Cafeteria Connections

Celebrate the many varieties of melons by hosting a "Melon Contest."

- Find as many different varieties as possible at local grocery store or farmers' market.*
- Set-up display of melon varieties in cafeteria.
- Decide on contest (e.g., name the varieties; identify the flesh color; estimate the number of seeds in each melon; estimate the circumference of each melon; estimate weight).
- Feature melon varieties on menu throughout month to promote contest.

*Refer to *What's in a Name?* on page 4 for different melon varieties.

Adapted from: Team Nutrition "Food Works," 1995.

Home Grown Facts

- California leads the nation in both cantaloupe and honeydew production — producing more than 70% of the nation's crop — and ranks fourth in watermelon production.
- The combined total value of the State's cantaloupe, honeydew and watermelon crops exceeds $217 million.
- Melons rank in the top 30 among California's commodity exports at a value of about $40 million.
- The cantaloupe is the predominant variety grown — accounting for more than half of all California grown melons.
- Fresno county is the leading producer of cantaloupes.
- The major growing regions for melons include the Central Valley (Sacramento, Stanislaus, Kern, Fresno, Kings, Merced and Tulare counties); and the southern desert valley (Imperial and Riverside counties).

2005 Data

For more information, visit:

http://anrcatalog.ucdavis.edu/pdf/7218.pdf
www.nass.usda.gov/About_NASS/index.asp

A Slice of Melon History

- Melons were first cultivated in Persia and northern Africa nearly 4,000 years ago, and later by ancient Greeks and Romans.
- Introduced to western and northern Europe during the Middle Ages, melons were harvested by the Spaniards and later the French and British.
- Christopher Columbus brought over the first melon seeds to North America on his second expedition, while watermelons arrived with African slaves.
- In 1683, the melon was introduced to California by Spanish missionaries.
- Melons and watermelons were grown almost exclusively in home gardens until the first half of the 20th century, when more disease- and wilt-resistant cultivars were developed by the USDA.

For a more detailed outline, visit:

www.harvestofthemonth.com

How Do Melons Grow?

Melons are a warm-weather annual plant sensitive to cold temperatures at any stage of growth. In fact, seeded melons germinate best under hotter temperatures, up to 95 F, and can tolerate temperatures in excess of 100 F. In California, melons go to market beginning in May with a continuous supply through October, peaking in July and August.

Melons grow best when planted on raised beds spaced every 12 inches, in rows spaced four to six feet apart. Due to their large size, melons are normally hand-harvested when ripe at the "full-slip" stage, when the fruit easily separates from the vine with slight pressure.

Soil	Loam or clay-loam; well-drained
Optimal Temperature	85 to 95 F
Exposure	Full sun
Irrigation	Minimal; keep tops of bed dry to minimize fruit contact with moist soil
Reproduction	Bee pollination
Days to harvest	75 to 100

For more information, visit:

www.cfaitc.org/GardenGuide/
http://anrcatalog.ucdavis.edu/pdf/7218.pdf

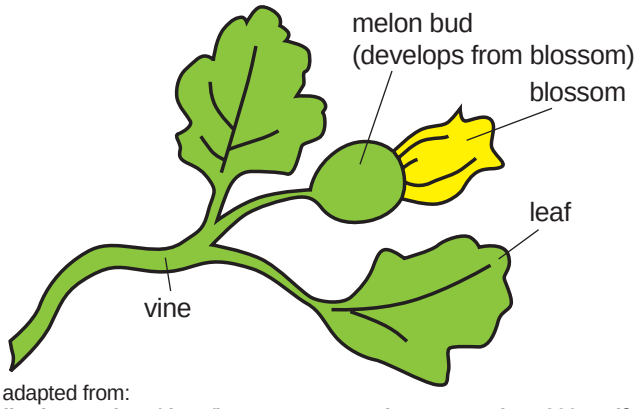


Image adapted from:
http://district.ausd.net/docs/harvest_watermelon_september_2005.pdf

To download reproducible botanical images, visit the *Educators' Corner* at **www.harvestofthemonth.com**.

Student Advocates

Support local growers and California agriculture by promoting farmers' markets.

- Introduce yourself to the local growers and ask if you can help promote sales.
- Make a schedule of farmers' markets in your area. If none are nearby, find out how to get one in your neighborhood.
- Develop a promotional flyer inviting students, friends and families to visit these markets.
- Distribute flyers on school campus and local neighbors.
- Increase attendance by hosting a contest or arranging a neighborhood walk to and from the market.

For information, visit:
www.localharvest.org

What's in a Name?

Pronunciation: mĕl'ən
Spanish name: melón
Family: Cucurbitaceae
Genus: *Cucumis*
Species: *C. melo*

Melons are vine-like herb plants of the Cucurbit family that bear an accessory fruit known as a false berry. The fruit is actually called *muskmelon* because of its odor when ripe, but over the years this has been shortened to *melon*.

The watermelon also belongs to the Cucurbit family, but is classified in the genus *Citrullus*. Therefore, it is only loosely considered a type of melon. There are numerous melon cultivars, but commercially the most common are the cantaloupe (Cantalupensis and Reticulatus Groups) and the honeydew (Inodorus Group).

Major Melon Cultivar Group	Characteristics	Includes
Cantalupensis	Rough and warty skin; grown only in Europe and South Africa	European cantaloupe
Inodorus	Smooth rind; subtle and sweet flavor	Honeydew, Crenshaw, casaba, winter melon, American melon, Oriental sweet melon
Reticulatus	Netted skin with musky odor	Netted melon, North American cantaloupe

For more information, visit:
www.hort.purdue.edu/

Adventurous Activities

Hint: Coordinate with *Exploring California Melons* activity on page 1.

Melon Math:

- Estimate the weight of each melon variety; measure weight and record.
- Estimate the circumference, surface area and volume of each variety; measure and record.
- Compare weight and size measurements for each variety. Determine if there is a correlation between weight and size. Why or why not?
- Determine the edible portion of each melon variety and weigh, if possible.
- Compare the ratio of fruit to rind for each melon variety.
- Estimate and record number of seeds in each variety. Determine which variety has the most number of seeds.

For more ideas, visit:
www.harvestofthemonth.com

Literature Links

- **Elementary:** *Anansi and the Talking Melon* by Eric Kimmel, *Melvin's Melons* by Sherry Vaughn, *A Seed Grows* by Pamela Hickman and Heather Collins and *Watermelon Day* by Kathi Appelt.
- **Secondary:** *Encyclopedia of Foods* by Inc. Experts from the Dole Food Company, The Mayo Clinic, UCLA Center for Human Nutrition [Editor], *Genetically Modified Food* by Nigel Hawkes and *Melons for the Passionate Grower* by Amy Goldman.

For more ideas, visit:
www.cfaitc.org/Bookshelf/Bookshelf.php

Physical Activity Corner

Physical education (PE) experiences provide students with a unique opportunity for problem solving, self-expression, socialization and conflict resolution. Research has shown that students who engage in daily PE have superior motor fitness, academic performance and a better attitude toward schools than their peers who do not. If your students cannot engage in PE every school day, remind them to be physically active for at least one hour every day before, during or after school. Work with your school's PE teachers to find an activity that you can implement on days when your students do not have PE.

For activity ideas, visit:
www.afterschoolpa.com

Next Month: Potatoes

CHAMPIONS for CHANGE
Network for a Healthy California

This material was funded by USDA's Food Stamp Program through the California Department of Public Health's *Network for a Healthy California*. These institutions are equal opportunity providers and employers. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483. © Copyright California Department of Public Health 2007.

How do they get the carrots to look like the rainbow?

LY-CO-PENE: the red pigment in the skins of red fruits and vegetables. They added some red color from a tomato and gave it to the carrot!

AN-THO-CY-AN-IN: the purple pigment in the skins of fruits and vegetables. They added some purple color from a blueberry and gave it to the carrot!

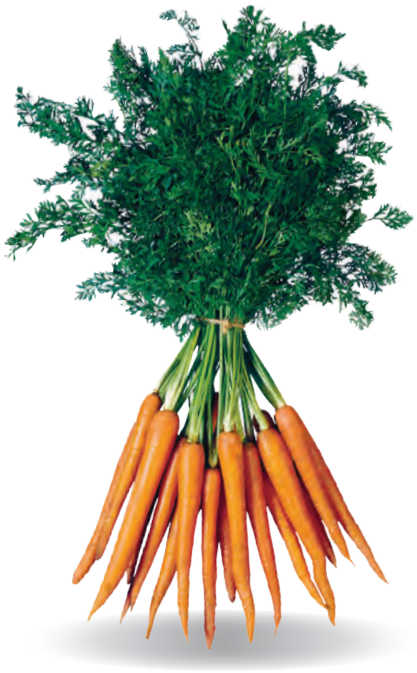
LU-TEIN: the yellow pigment in the skins of blue/green fruits and vegetables. They added some yellow color from kale and gave it to the carrot!

Now besides keeping your eyes healthy with normal carrots, you can keep your heart healthy too!

Does the colored carrot taste any different than a normal carrot?

Harvest of the Month

Network for a Healthy California



Nutrition Facts

Serving Size: ½ cup carrots, sliced (61g)

Calories 25 — Calories from Fat 0

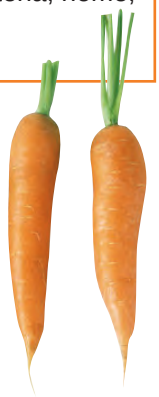
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 45mg	2%
Total Carbohydrate 6g	2%
Dietary Fiber 2g	7%
Sugars 3g	
Protein 1g	

Vitamin A 204% — Calcium 2%
Vitamin C 6% — Iron 1%

CARROTS

Health and Learning Success Go Hand-In-Hand

School gardening presents a great opportunity to teach students about fruits and vegetables and actively engage them in physical activity. Studies have shown that school-based nutrition education promoting healthful eating and physical activity can improve academic performance. *Harvest of the Month* connects with core curricula to give students the chance to explore, taste, and learn about the importance of eating fruits and vegetables. It links the classroom, cafeteria, home, and community to motivate and support students to make healthy food choices and be physically active every day.



Exploring California Carrots: Taste Testing

What You Will Need (per student group):

- Raw carrots, peeled and sliced into sticks; one stick per student
- Canned carrots; enough to provide each student with a taste
- Paper and pencils
- Printed Nutrition Facts labels for fresh and canned carrots*

*Download labels from **www.harvestofthemonth.com**.

Activity:

- Taste raw carrots and note the color, texture, smell, flavor, and sound.
- Repeat activity with the canned carrots.
- Compare and contrast the similarities and differences, including the nutrition information.
- Using information from observations and research, apply in a writing activity.
- Compare ideas and observations of carrot taste testing with previous taste testings.

For more ideas, reference:
School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39-42.

Cooking in Class: Vegetable Medley with Salsa Dip

Makes 32 tastes at ¼ cup vegetables and 2 tablespoons dip each

Ingredients:

- 4 carrots, cut into 3-inch sticks
- 4 celery stalks, cut into 3-inch sticks
- 1 jicama, peeled and cut into 3-inch sticks
- 1 bunch radishes, trimmed
- 12 green onions, trimmed
- 1 (16-ounce) container fat free sour cream
- 2 cups pico de gallo (salsa)
- Small paper plates and napkins

1. Arrange vegetables on a platter.
2. In medium bowl, mix sour cream and pico de gallo.
3. Spoon 2 tablespoons dip and 1 of each vegetable on small plate. Serve.

Nutrition information per serving:
Calories 25, Carbohydrate 5 g, Dietary Fiber 2 g, Protein 1 g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 1 mg, Sodium 77 mg

Adapted from: *Healthy Latino Recipes Made With Love, Network for a Healthy California*, 2008.

For more ideas, reference:
Kids Cook Farm-Fresh Food, CDE, 2002.

Reasons to Eat Carrots

A ½ cup of fresh or cooked carrots is:

- An excellent source of vitamin A, providing more than 200% of the recommended Daily Value.
- A good source of vitamin K.
- A source of vitamin C, fiber, and potassium.

*Learn more about vitamin A on page 2.

Champion Sources of Vitamin A*:

- Cantaloupe
- Carrots
- Cooked greens
- Red bell peppers
- Sweet potatoes
- Winter squash

*Champion sources provide an excellent source of vitamin A (at least 20% Daily Value).

For more information, visit:
www.nal.usda.gov/fnic/foodcomp/search/
(NDB No.: 11124, 11125, 11131)

What is Vitamin A?

- Vitamin A is a fat-soluble vitamin, which means it can be stored for long periods of time in your body.
- Vitamin A is an antioxidant that helps to keep the body safe from free radicals. Among Americans, toxic consumption levels of vitamin A are more of a concern than deficiencies.
- Vitamin A is required for the proper development and functioning of our eyes, skin, and many other parts of our bodies.
- Individuals who have low levels vitamin A may develop night blindness.
- Vitamin A is required for normal functioning of the immune system.
- Vitamin A that is found in colorful fruits and vegetables, like carrots, is called provitamin A carotenoid. It can be made into retinol in the body. Some carotenoids (like beta carotene, alpha carotene, and beta cryptoxanthin) can be made into vitamin A by the body.

Sources:
http://lpi.oregonstate.edu/infocenter/vitamins/vitaminA/
http://jn.nutrition.org/
http://ods.od.nih.gov/factsheets/vitamina.asp

How Do Carrots Grow?

Carrots are biennial, meaning they have a two-year life cycle. In the first year, the edible root is formed, followed by production of the flower and seeds in the second year. Carrots can be grown most anywhere. The ideal temperature range is 60 to 70 F. For this reason, carrots are grown year-round in California. They require a growing season of 110 to 160 days and need deep, loose, well-drained soils.

Prior to planting, the soil is plowed deep and disked to avoid clods; a compaction layer also helps keep the roots from becoming forked or rough. Germination of the seedlings may be advanced by sowing them in V-shaped furrows. Seeds are then covered with a quarter-inch layer of sand or sifted compost. Most fields are sprinkler-irrigated during the entire growing season. Carrots are mechanically harvested with self-propelled multi-row harvesters that can harvest up to 1,000 tons per day.

Carrot varieties vary only slightly in taste, shape, or size, so most consumers are unable to tell one variety from another. Varieties are actually grown in particular growing regions or for specific uses. For example, carrots found in supermarkets that are packaged in cello bags are grown specifically larger and for the supermarket.

Baby-cut carrots are made from full-grown, small diameter carrots by peeling and cutting them to the desired length. They are planted closer together so the roots stay slim and there is less waste when the carrots are cut to their small size. True baby carrots are removed from the ground early and actually look like miniature carrots.

For more information, visit:
www.botany.org

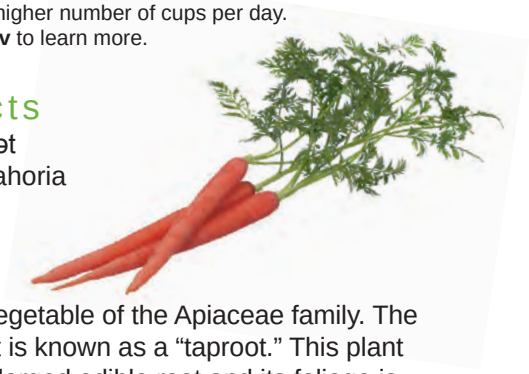
How Much Do I Need?

A ½ cup of sliced carrots is about one medium carrot or four baby carrots. This is the same as about one cupped handful. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. Have students visit **www.mypyramid.gov/kids** to find out how much they need to eat from each group in MyPyramid. Have them write down their goals and track them each week.

Recommended Daily Amount of Fruits and Vegetables*

	Kids, Ages 5-12	**Teens and Adults, Ages 13 and up**
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.



Botanical Facts

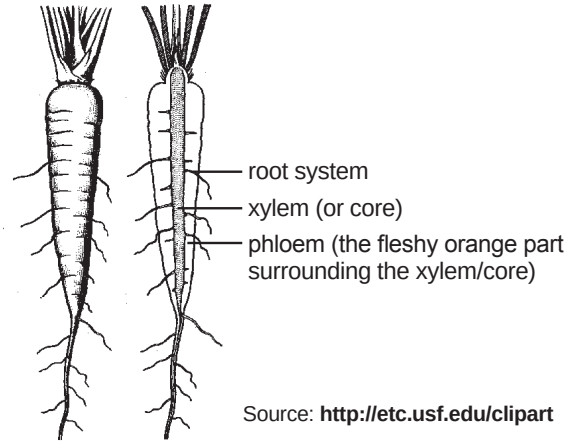
Pronunciation: kăr´ət
Spanish name: zanahoria
Family: Apiaceae
Genus: *Daucus*
Species: *D. carota*

The carrot is a root vegetable of the Apiaceae family. The edible part of a carrot is known as a "taproot." This plant is cultivated for its enlarged edible root and its foliage is fine and lacy. In fact, the wild carrot is actually a familiar wildflower known as "Queen Anne's lace."

Carrots are commonly grouped into two main varieties: eastern and western. Eastern carrots are the original cultivar and are usually purple or yellow in color and have fewer branched roots. The purple color stems from an anthocyanin pigment lost in later varieties. (See *The Roots of Carrot History* on page 3 for details.) Western carrots emerged in the Netherlands in the 15th or 16th century. Their orange color made them popular among countries associated with the House of Orange and the Dutch struggle for independence.

Carrots contain plant pigments called *carotenoids,* of which beta carotene is a member. These pigments were first identified in carrots (giving them their orange color) and their name was thus derived from the word *carrot*.

For more information, visit:
www.caes.uga.edu/publications/pubDetail.cfm?pk_id=7429



Source: **http://etc.usf.edu/clipart**

The Roots of Carrot History

- Carrots originated in central Asia, near Afghanistan, several thousand years ago.
- Ancient ancestors of the modern carrot were not yellow-orange, but of purplish colors ranging from lavender to almost black. The yellow-orange root came from a mutant variety that lacked the purple pigment.
- Purple and yellow-orange varieties spread west to the Mediterranean, where ancient Greeks and Romans used them for medicinal purposes.
- In the 14th century, carrots arrived in China, which is now the world's leading carrot producer.
- Around the 1600s, the purple variety nearly became extinct, and the yellow-orange variety was introduced to America and Japan.
- The high beta carotene content of carrots was discovered in the 19th century. During World War II, the British worked to develop a variety of higher beta carotene carrots to help their aviators see better at night.

For more information, visit:
www.cfaitc.org/factsheets/pdf/FreshCarrots.pdf

Student Sleuths

1. Name three specific functions that vitamin A provides for the body.
2. What are some of the signs of vitamin A deficiency?
3. The percent Daily Value (%DV) tells you how much of a nutrient you get in a serving of a food item and is based on a 2,000-calorie diet. Vitamin A is measured in International Units (IU). Look up the IU for vitamin A that your body needs based on your gender and age. Compile a list of foods you eat and find the %DV for vitamin A in these foods. Determine if you are getting an adequate amount of vitamin A in your diet.
4. Map the different commercial carrot-producing regions in the world.
5. Identify and compare the peak harvest times for carrots in each California region.

For information, visit:
www.fruitsandveggiesmatter.gov/month/carrot.html
www.ipmcenters.org/cropprofiles/docs/cacarrots.html
http://ohioline.osu.edu/hyg-fact/5000/5551.html
http://lpi.oregonstate.edu/infocenter/vitamins/vitaminA/

Student Champions

Encourage students to come up with a slogan for healthy eating. Students can design promotional inserts, pins, and posters that display the slogan and fun facts about healthy eating. Students can distribute these materials to customers at local farmers' markets, grocery stores, restaurants, and hospitals to show support for healthy eating habits.

School Garden: From Seed to Life

If your school has a garden, here is an activity you may want to implement. Look for donations to cover the cost of seeds, tools, irrigation systems, electric pumps, and any salary incurred by garden educators or others.

Students who work directly with plants or in a garden are more likely to understand the important role plants and agriculture play in our lives. Discuss how plants contribute to our society and health. Students can then plant a "container garden" to give to a person or organization, such as a children's hospital, nursing home, neighbor, or take home to their family.

What You Will Need:

- Small plant containers
- Variety of plants
- Bagged soil mix*
- Basin for moistening soil

*Note: Garden soil is too heavy for small containers and often contains weed seeds.

Activity:

- Fill container with moistened soil mix.
- Loosen plant from its original pot by gently squeezing the bottom of the container or gently tapping it on the ground to loosen the root ball.
- Carefully move to new container and plant at same depth as it was in the old pot.
- Gently firm the soil in around the plant.
- Place container in a spot where it can drain, such as a sink basin or on the ground outside.
- Use a watering can to water the soil very gently, being careful not to create pockets around settled soil.
- Create plant labels and decorate note cards with care instructions to accompany each plant container.

Adapted from: www.kidsgardening.com/Dig/dig.asp?act=t

For more ideas, reference:
Nutrition to Grow On, CDE, 2004.

Home Grown Facts

Source: **www.fsa.usda.gov/ca/**

- California ranks first nationally in the production of carrots.
- Carrots rank among California's top 25 agricultural exports and top three among vegetables.
- Baby-cut peeled carrots account for more than 35% of California's carrot production and 70% of the total acreage.
- Holtville, California is known as the "Carrot Capital of the World."
- Kern County is the state's largest producer of carrots with 75% of the state's acreage.
- There are four main carrot-producing regions in California: Southern San Joaquin Valley/Cuyama Valley, Southern Desert, Central Coast, and High Desert.

For more information, visit:
www.ipmcenters.org/cropprofiles/docs/cacarrots.html
www.cdfa.ca.gov

Physical Activity Corner

Students need to get at least 60 minutes of physical activity each day to help them stay healthy and fit, both mentally and physically. Take time to play a different game or activity each week in or out of the classroom.

Objective:

Develop hand-eye coordination and fast-twitch reflexes.

What You Will Need:

- Frisbee®
- Four bases
- Slide

Activity: *(similar to baseball)*

- Separate students into two teams.
- Set up four bases on playground near slide.
- "Batter" goes down the slide and takes Frisbee® at home plate and throws it.
- If it's "fair" and no one catches the Frisbee®, then "batter" runs the bases.
- Tagging is done with the Frisbee® and someone must be holding it.
- After three outs, the teams switch.
- Play as many rounds as time allows.

For more ideas, visit:
www.sparkpe.org

Adventurous Activities

Creative Writing:

- Based on the *School Garden* discussion (page 3), ask students to write an essay about how carrots (or their favorite fruit or vegetable) contribute to our health and the state's economy.

Science Investigation:

- Demonstrate the water content of carrots.
- Fill a glass of water with ink or food coloring and then put a carrot in the glass.
- Remove carrot after one day and cut it in half, separating the top and bottom halves.
- Ask students questions about what they see and compare it with a raw, cut carrot.
- Cut the halves lengthwise to study the "veins" in a carrot.

Nutrient Analysis:

- Distribute *Fresh Fruit and Vegetable Photo Cards** (CDE, 1997) for carrots, sweet potatoes, beets, and turnips.
- For each item, calculate the number of grams of the nutrients in the graphs by using the percentages shown in the graph and daily values.

*Download from **www.harvestofthemonth.com**.

For more ideas, visit:
www.hhs.gov/kids

Cafeteria Connections

Work with school nutrition staff to find out which form of raw and/or cooked carrots students prefer.

- Conduct taste tests during lunch.
- Older students or a math class may be interested in conducting the taste test and determining cost, student preference, and nutrient analysis.
- Students can taste test the various ways in which raw carrots may be served, such as whole, sticks, baby, mini, sliced, and shredded. Students can also test cooked carrots.
- After the taste tests, feature the school's "choice" on the school lunch menu. On the same day, fill a jar with the "favorite carrot choice" and ask students to guess how many carrots it took to fill the jar. Provide incentives and/or awards as appropriate for your school site.

For more ideas, reference:
Fruits and Vegetables Galore, USDA, 2004.
www.schoolnutrition.org

Just the Facts

- The average person eats 17 pounds of carrots per year.
- Carrots contain about 90% water.
- Most baby-cut carrots are made from large carrots that have been peeled and trimmed. The trimmings are used in salad mixes, juices, and other carrot products.
- The carrot was one of the first vegetables to be canned in the early 1800s.
- Carrots, or "skirrets," were originally purple, white, and yellow. The orange carrot was developed in Holland as a tribute to William I of Orange during the Dutch fight for independence from Spain in the 16th century.

For more information, visit:
www.cfaitc.org/factsheets/pdf/FreshCarrots.pdf

Literature Links

- **Primary:** *The Carrot Seed* by Ruth Kraus (available in Spanish), *Carrot Soup* by John Segal, Curious George, *The Perfect Carrot* by Marcy Goldberg Sacks, *The Giant Carrot* by Jan Peck, *Just Enough Carrots* by Stuart Murphy, *The Life Cycle of a Carrot* by Linda Tagliaferro, and *Tops and Bottoms* by Janet Stevens.

For more ideas, visit:
www.cfaitc.org/books

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from USDA SNAP, known in California as *CalFresh* (formerly Food Stamps). These institutions are equal opportunity providers and employers. *CalFresh* provides assistance to low-income households and can help buy nutritious foods for better health. For *CalFresh* information, call 1-877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © 2011

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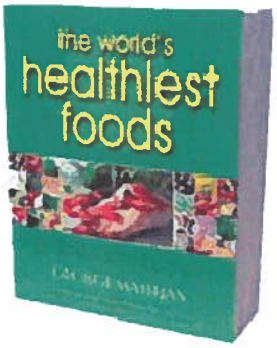

Do purple cauliflower and orange cauliflower have the same nutritional value as white cauliflower?

Unfortunately, I have not seen complete nutritional analysis done for the purple and orange varieties of cauliflower. Yet, I would like to note that the difference in color is representative of the difference in phytonutrient pigments present. For example, anthocyanin flavonoids lend purple cauliflower its hue while carotenoids (some of which have vitamin A activity) lend orange cauliflower its unique coloration. Each of these phytonutrients adds to cauliflower's antioxidant concentration. I would describe each of these different forms of cauliflower as unique in their nutritional value and each variety can be viewed as making outstanding contributions to a Healthiest Way of Eating.

For more information on this topic, please see:

- Cauliflower
- Flavonoids
- Carotenoids

Cauliflower: Nutrition . Selection . Storage

Nutrition information for cauliflower and tips on how to select, store and prepare it. Health Benefits

[All Fruits] [All Vegetables]

Did You Know...

Not all cauliflower is white! Try purple and orange cauliflower too.

SELECTION STORAGE PREP

How to Select
Choose cauliflower with compact, creamy white curds and bright green, firmly attached leaves.
Avoid brown spots or loose sections that are spread out.

How to Store
Refrigerate cauliflower in plastic bag up to 5 days.

Nutrition Benefits
Fat free; saturated fat free; very low sodium; cholesterol free; low calorie; high in vitamin C; good source of folate.

Top 10 Ways to Enjoy Cauliflower

Fruit Nutrition Database
Vegetable Nutrition Database

You may also be interested in...

How to Read a Food Label
Key Nutrients Found in Fruits & Veggies
Dietary Guidelines for Americans
Fruit & Vegetable Recipe Search

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Nutrition Facts

Serving Size 1/6 medium head (99g)

Amount Per Serving	
Calories 25	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 30mg	1%
Total Carbohydrate 5g	2%
Dietary Fiber 2g	8%
Sugars 2g	
Protein 2g	

Vitamin A 0%	Vitamin C 100%
Calcium 2%	Iron 2%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 Carbohydrate 4 Protein 4

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Health Benefits of Fruits & Vegetables

The natural antioxidants in fruits and vegetables will help keep your body working at its best, so consuming a diet that meets your daily recommended amount of fruits and vegetables is one of the best ways to give your body a strong defense against disease. Fruits and vegetables are protective to health as they're helpful at **reducing the risk of coronary heart disease, stroke and some cancers. They're also low in calories, which helps prevent obesity ... a significant risk factor for type 2 diabetes, cancer and cardiovascular disease.**

Top 10 Reasons to Eat More Fruits and Vegetables

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Chayote Squash: Nutrition . Selection . Storage

Nutrition information for chayote squash and tips on how to select, store and prepare it. Health Benefits

[All Fruits] [All Vegetables]

Did You Know...

Chayote squash can be substituted for summer squash in any recipe. The skin and seed are edible.

PREP

How To Select
Choose firm chayote with smooth, unblemished skin.

How to Store
Refrigerate chayote squash in plastic bag for up to a month. Rinse before using.

Nutrition Benefits
Fat free, cholesterol free, sodium free, good source of
vitamin C.

Fruit Nutrition Database
Vegetable Nutrition Database

You may also be interested in...

How to Read a Food Label
Key Nutrients Found in Fruits & Veggies

Nutrition Facts

Serving Size 1/2 cup 1" pieces (66g)
Servings Per Container

Amount Per Serving

Calories 15	**Calories from Fat 0**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 3g	**1%**
Dietary Fiber 1g	4%
Sugars 1g	
Protein 1g	

Vitamin A 0% • Vitamin C 8%
Calcium 2% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Dietary Guidelines for Americans
Fruit & Vegetable Recipe Search

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Health Benefits of Fruits & Vegetables

The natural antioxidants in fruits and vegetables will help keep your body working at its best, so consuming a diet that meets your daily recommended amount of fruits and vegetables is one of the best ways to give your body a strong defense against disease. Fruits and vegetables are protective to health as they're helpful at **reducing the risk**

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Bing Cherry Can produce up to 100 lbs of tasty cherries each year! Easy to grow. Fast-Growing-Trees.com

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- Cherry Trees
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- Weeping Trees
- Nutrition Facts

Cherry Facts Home

Weeping Cherry Tree

Yoshino Cherry

Cherry Pitter

Calories In Cherries

Ground Cherry

Wild Cherry Tree

Cherry Bush

Carolina Cherry

Cherry Facts - Information on Cherries and Cherry Trees

The following compilation of cherry facts may help you to determine not only which cherries are considered to be the most beneficial to your health, but also which groups of cherries might be the easiest for a novice to raise. One of the least known cherry facts is in regard to the sweet cherry, which has the least amount of calories when eaten raw. Because cherries tend to be a seasonal fruit, and are sometimes not at their peak when shipped to our local market, we tend to reach for alternatives without much concern for what might be adding to those frozen cherries. Why should we feel worried about buying fruit? It's not like we're buying chocolate. It's certainly not as if we want to dip our cherries in chocolate. But what if the syrups and sugars that were packed with your frozen cherries made them worse for than if you had drenched them in chocolate?

Glycemic Impact Diet healthynow.com
Learn About Glycemic Impact Diet. Compare Your Health Options Now.

Harry & David Cherries www.HarryandDavid.com
Limited Time Internet Exclusive! Special Savings on Select Items.

Cherry tree Local.com
Find Cherry tree Near You With Local.com!

Weeping Cherry Tree Yahoo.com
Learn more now. Weeping Cherry Tree

AdChoices

Our next set of cherry facts: buyer beware. Most cherry products on the shelf in your grocery store or deli market are absolutely loaded with sugar. A 1 cup serving of raw sweet cherries has just 71 calories. This same cup of frozen, sweetened cherries packs a walloping 266 calories. I don't know about you, but I would just as soon eat a chocolate bar with my fresh cherries as to ingest pure sugar where it isn't even necessary. One cup of raw tart cherries has just 78 calories, which is surprisingly slightly higher than the calorie count of our sweet cherries, but still a great alternative to packaged, sweetened cherries.

And now, maybe we should cover some cherry facts about trees and bushes. Yes, there are cherry bushes, wonderful ones, and we'll get back to them in just a minute. There are literally hundreds of varieties of cherry trees available at nurseries and home improvement stores across the country, but knowing which ones will work for you is the trick.

If you are seeking a cherry tree strictly for ornamental purposes, there are many weeping, Japanese, and dwarf cherry trees to choose from. Each has its own strengths and weaknesses, but most have been cross bred to bring out the hardy, blossom abundant trees that we have come to love so much.

We can not finish talking cherry facts until the matter of the incredible cherry bush is brought to light. In the 1940's, a gardener decided that he would cross a pie cherry tree with a Mongolian cherry tree, in attempts to create not only a new texture and flavor of cherry, but to birth a hardier and more adaptable cherry tree. Since those early days of cross breeding, a vast assortment of cherry bushes, who max out at 4 to 6 feet tall, have been created. They produce every type of cherry one could wish for, yet require hardly any maintenance or waiting time.

Diet Meal Delivery Plans www.Diettogo.com
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Health & *Nutrition*

You know that Sunkist citrus forms the basis of a healthy and nutritious diet - but did you know just how good it is for you? Find out how citrus fruits, including oranges, grapefruits and lemons, can help promote positive health and impact the way you look and feel from childhood through your senior years.

Nutrition Labels

- select a label to view -

Orange Nutrition Label

Lemon

Grapefruit

Lime

Cara Cara

Clementine

Meyer Lemon

Minneola Tangelo

Moro Orange

Oroblanco

Pummelo

Satsuma Mandarin

Tangerines

Nutrition Facts

Serving Size 1 medium orange (154g)

Amount Per Serving

Calories 80	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Potassium 250mg	7%
Total Carbohydrate 19g	6%
Dietary Fiber 3g	12%
Sugars 14g	
Protein 1g	

Vitamin A 2%	• Vitamin C 130%
Calcium 6%	• Iron 0%
Thiamin 10%	• Riboflavin 4%
Niacin 2%	• Vitamin B6 4%
Folate 10%	• Pantothenic Acid 4%
Phosphorus 2%	• Zinc 0%
Magnesium 4%	• Selenium 2%
Copper 4%	• Manganese 2%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Nutrition Brochure

Do you know all about the nutritional benefits of Citrus Fruit?

Read our Flash brochure to find out how citrus can help you

Explore Brochure

Citrus Myths

Can eating grapefruit help me lose weight? Find this answer and more.

Fun Facts

You may be surprised when you read these fun facts about citrus.

Why Citrus?

- Consuming the necessary vitamins, minerals and other nutrients that enhance one's total wellness through natural foods assures an optimal balance of nutrients, rather than running the risk of excess through the use of supplements.[1]
- Increased levels of stress suppress the body's immune function, and during these times many people tend to cuddle up with comfort food. For this reason, it is especially important to feed stress-related cravings with healthy foods that help build the immune system.
- The good news: a healthy lifestyle - including diet - works well as preventative care for both men and women. And the AHA urges prevention

through choosing a diet with plenty of vegetables and fruits, like oranges, that contain heart-healthy nutrients such as Vitamin C, folate, pectin, potassium and phytochemicals.

- Studies show that eating 8 - 10 servings of fruits and vegetables lowers blood pressure readings comparable to that seen with the use of high- blood pressure medication.[2]
- Studies show that people who eat fruit such as lemons, tangerines, oranges and other whole foods, tend to eat less at subsequent meals, compared to people who eat "lighter, more calorie-dense foods" such as chips, snack crackers, desserts or candy.[3]
- Following a balanced diet that includes fruit, along with regular exercise will help bring weight down without jeopardizing your health.

1. Nyyssönen, Kristiina, Parviainen, Markku T
2. Salonen, Riita, Tumilehto, Jaakko, Salonen, Jukka T.
3. Vitamin C deficiency and risk of myocardial infarction: prospective population study of men from Eastern Finland.
Journal of American Dietetic Association, March 1997.

NOTE: The contents of Sunkist Healthy Living are for informational purposes only and are not intended to be a substitute for professional advice. Always seek the advice of your physician or other qualified health provider prior to beginning a new diet.

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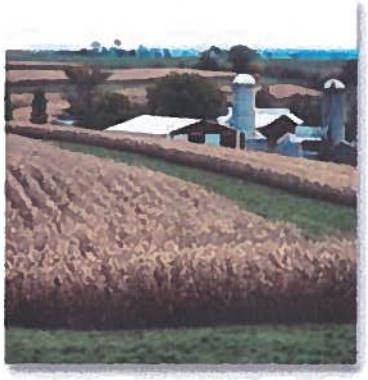
CAMP SILOS

Quick Facts

Did you know corn is America's number one field crop? Corn leads all other crops in value and volume of production. Here's some more interesting facts about corn....



Corn Math

- An ear of corn averages 800 kernels in 16 rows.
- A pound of corn consists of approximately 1,300 kernels.
- 100 bushels of corn produces approximately 7,280,000 kernels.
- Each year, a single U.S. farmer provides food and fiber for 129 people - 97 in the U.S. and 32 overseas.
- In the U.S., corn production measures more than 2 times that of any other crop.
- Over 55% of Iowa's corn goes to foreign markets. The rest is used in other parts of the United States.

Corn Products

- Your bacon and egg breakfast, glass of milk at lunch, or hamburger for supper were all produced with U.S. corn.
- Corn is a major component in many food items like cereals, peanut butter, snack foods and soft drinks.

- U.S. researchers have led the way in finding many uses for corn - like in vitamins and amino acids.

- Corn is used to produce fuel alcohol. Fuel alcohol makes gasoline burn cleaner, reducing air pollution, and it doesn't pollute the water.

Corn Geography

- Iowa, Illinois, Nebraska and Minnesota account for over 50 percent of the corn grown in the U.S. Other major corn growing states are Indiana, Ohio, Wisconsin, South Dakota, Michigan, Missouri, Kansas and Kentucky.

- The "Corn Belt" includes the states of Iowa, Illinois, Nebraska, Minnesota, Indiana, Ohio, Wisconsin, South Dakota, Michigan, Missouri, Kansas and Kentucky.

- Corn is produced on every continent of the world with the exception of Antarctica.

- The area known as the "Pacific Rim" region (in Asia) is emerging as the world's fastest growing market for U.S. corn. There, most of the corn is fed to livestock to produce food for humans. The majority of the world's population is located in the Pacific Rim region.

- Exports are critical to the well being of American agriculture. Nearly one third of our nation's corn crop is targeted for exports.

More Corn Facts.....

Iowa Corn Production and Use

A World Without Corn

Other Corn Facts

Programs
Med School Education
Secondary Education
Policy Maker Education
Sustaining Life
Climate Change Futures
Healthy Ocean, Healthy Humans
Healthy and Sustainable Food
Harvard Community Garden
Eating for Your Health and the Environment
New England Seasonal Guide
Mid-Atlantic Seasonal Guide
Scientists and Evangelicals
Initiative
Archives

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Directions

Healthy and Sustainable Food

Sweet Corn

DATES AVAILABLE:

New England: July through September
Mid-Atlantic: July through mid-October

BRIEF DESCRIPTION:

Corn (*Zea Mays*, Gramineae) has a rich history upon which many American cultures were based. Originating in Mexico, where it was called maize, between 3,500 and 7,000 B.C.E., it has been a staple in North America since about 800 C.E. Tough field, or dent corn is the most important commercial type cultivated and is used as a grain for livestock feed and in some foods. Sweet corn, which ranks second in commercial importance, has been bred for tenderness and sweetness on the cob. Depending on variety, sweet corn kernels are crunchy, smooth, and juicy.

Corn ears grow on stalks, and are covered by layers of outer leaves, (collectively called the husk), which are pale green. A layer of opaque silky strings, aptly called corn silk, are the remains of tiny tubes that carry pollen to each of the flowers of corn, turning them into kernels. The kernels line the cob in rows and are the edible part of the plant. Kernels are commonly yellow or white and are found on the cob in either pure or mixed colors (bicolor). Sugar levels, corn flavor and the longevity of sweet corn is genetically controlled. Sweetness of different types can be categorized as sugary, sugary enhanced and supersweet. All sweet corn is classified by its genetic background.

VARIETIES:

"Temptation," one of the most popular sweet corns, has narrow 7-inch ears, with sweet bicolor kernels. **"Tuxedo"** is a rich sweet yellow corn with slightly larger 8-inch ears. **"Silver Queen"** is a late maturing, large-eared sweet white corn with a creamy texture. **"Fleet"** bicolor corn is quite sweet, grows 7 ½ inch ears, and is available early in the season. **"Precious Gem"** and **"Delectable"** are bicolor sweet corns with full 8-inch ears that grow well in colder climates. **"Cohasset"** is an 8-inch bicolor ear that is a favorite in taste tests for its balance of sweetness with a distinct corn flavor.

USING CORN:

When shopping for corn at the local market, be sure it has been kept cool and out of direct light as these speed the conversion of sugars to starch. Choose moist, firmly wrapped corn with intact husks and silks. Check the kernels by pulling the husk and silk away from the top of the ear and press kernel. Fresh corn kernels will be plump and juicy and when punctured, ooze milky liquid. Refrigerate immediately and use as quickly as possible to maintain sweetness.

Corn has many uses. It can be grilled, baked, or steamed in its husk, or the husk and silk can be removed for steaming, boiling, or roasting. Corn can be eaten directly off the cob, undressed or with a light coating of butter. Corn can also be cut off the cob for use in casseroles, side dishes, soups and stews, or sautéed with other fresh vegetables. Raw corn kernels can be added to salads, salsas, and guacamole. Be sure not to overcook corn as it quickly becomes tough and loses flavor.

NUTRITIONAL INFORMATION:

Corn is rich in vitamins and minerals, but because of its starch content, is also higher in calories and fat than many other vegetables. Every cup serving of cooked corn provides about 130 calories and 1.8 grams of fat. It is rich in thiamin, and a good source of fiber, protein, vitamin C, niacin, magnesium, phosphorus, potassium, and folate. Corn also contains yellow carotenoid pigments, including zeaxanthin, one of the two main eye-protecting antioxidants.

STORAGE:

General: For best flavor, corn should be eaten the day of purchase. Although it needs to be kept cool if stored, refrigeration decreases the flavor. If refrigeration is necessary, leave the husks intact and store in a plastic bag for no more than one to two days. It stored at temperatures greater than 860F corn can lose more than 50% of its sugar in a single day.

Freezing: Corn can be frozen after blanching, up to one year on the cob or two to three months if the kernels are cut off the cob. Remove husk and silk, and briefly boil or steam the corn on the cob. Place whole cobs, or kernels removed from the cob, in airtight containers and freeze.

Canning: Corn can be canned in whole kernel or cream style in a pressure canner. Corn can also be made into relish and stored in jars.

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Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Your Local School Wellness Policy (LSWP) can help improve the academic success of your students. Studies show a clear link between nutrition, physical fitness, and academic achievement. Strong bodies and strong minds work together to help students succeed – meaning increased concentration, improved mathematics, reading and writing test scores, and less disruptive behavior. Bring your LSWP to life by incorporating *Harvest of the Month* throughout the year.

Exploring California Cucumbers: Taste Testing

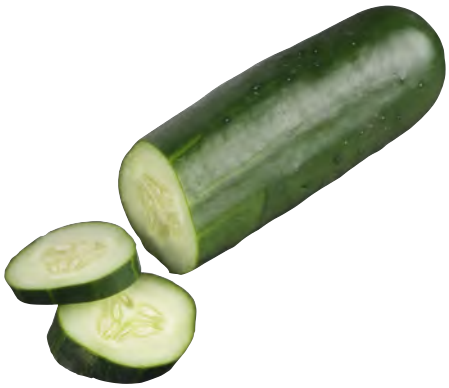
Getting Started:

- Partner with your school nutrition staff, local farmers, or grocery stores. Get produce samples for taste testing.

What You Will Need (per group):

- 2 different varieties of raw, whole cucumbers (rinsed)*
- 1 dill pickle
- Paring knives and cutting boards
- Napkins/paper towels

*Refer to page 2 for a list of varieties.



Activity:

- Have students make three columns and label with each variety of cucumber and dill pickle. Make five rows and label as: look, feel, touch, smell, taste.
- Examine each item using the five senses. Describe findings in the chart. Discuss similarities and differences as a class.
- Make another grid with the same column labels. Label four rows: sweet, salty, sour, bitter.
- Enter presence or absence of each taste bud sensation. Discuss the similarities and differences as a class.

For more ideas, reference:
Kids Cook Farm-Fresh Food, CDE, 2002.

Nutrition Facts

Serving Size: ½ cup cucumbers, sliced (52g)

Calories 8	Calories from Fat 0
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 2g	1%
Dietary Fiber 0g	1%
Sugars 1g	
Protein 0g	
Vitamin A 1%	Calcium 1%
Vitamin C 3%	Iron 1%

Cooking in Class: Chili Cucumbers

Ingredients:

Makes 20 tastes

- 40 whole wheat crackers
- 3 large cucumbers (40 slices)
- Chili powder
- Serving tray and napkins

1. Place one cucumber slice on top of a cracker.
2. Sprinkle with chili powder. Serve two crackers with napkin to each student.

Source: Monrovia Unified School District

For nutrition information, visit:
www.harvestofthemonth.com

Reasons to Eat Cucumbers

A ½ cup of sliced cucumbers provides:

- A good source of vitamin K.
- A source of water, a vital nutrient for the body.*

*Learn about water on page 2.

For information, visit:
www.nal.usda.gov/fnic/foodcomp/search

Champion Sources of Water:*

(Percent Water by Weight)

- Cabbage (92%)
- Cantaloupe (90%)
- Celery (95%)
- Cucumbers (96%)
- Grapefruit (90%)
- Honeydew melon (90%)
- Spinach (91%)
- Strawberries (91%)
- Tomatoes (95%)
- Watermelon (91%)

*Champion sources contain at least 90% water.

For information, visit:
www.extension.iastate.edu/nutrition/sport/fluids.html

CUCUMBERS

What is Water?

- Water is an essential nutrient for all life forms.
- Approximately 60-65% of the human body is made up of water, or about 11-12 gallons for a 150-pound person.
- Every cell, tissue, and organ and nearly every bodily function needs water to operate.
- Water carries nutrients, helps maintain normal body temperature, lubricates joints, and helps get rid of waste products.
- The recommended daily amount of fluid is 64 ounces (or eight cups).
- Water can come from foods, like fruits and vegetables, as well as plain water and other beverages.

How Much Do I Need?

A ½ cup of sliced cucumbers is about one cupped handful. This is about one medium cucumber. The amount of fruits and vegetables you need depends on your age, gender, and physical activity level. Look at the chart below to find out how much you and your students need.

Recommended Daily Amounts of Fruits and Vegetables*

	Kids, Ages 5-12	**Teens and Adults, Ages 13 and up**
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.

Set an example by incorporating *Harvest of the Month* produce into your meals and snacks. Choose at least one day each month to eat with your students. Remind them that eating a variety of colorful fruits and vegetables will help them reach their total daily needs.

How Do Cucumbers Grow?

The cucumber is a warm weather, tropical plant. Outdoor cucumber plants are *monoecious* (meaning there are both stamens and pistils in separate flowers on the same plant) and produce 10-20 male flowers for every one female flower. When the female flower is pollinated, the cucumbers have seeds. Greenhouse cucumbers are generally *parthenocarpic*. This means the plants only have female flowers (gynoecious), which do not require pollination; therefore, the cucumbers are seedless.

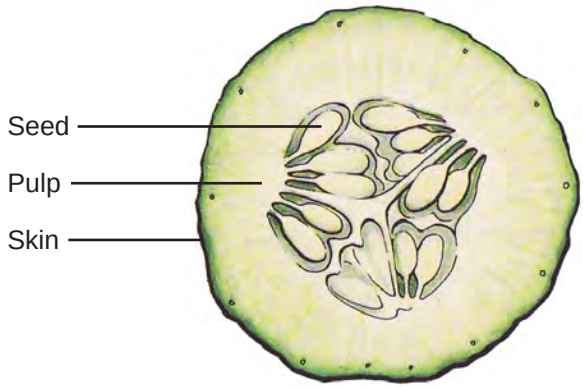
For more information, visit:
http://vric.ucdavis.edu/main/veg_info.htm
http://urbanext.illinois.edu/veggies/cucumber1.html

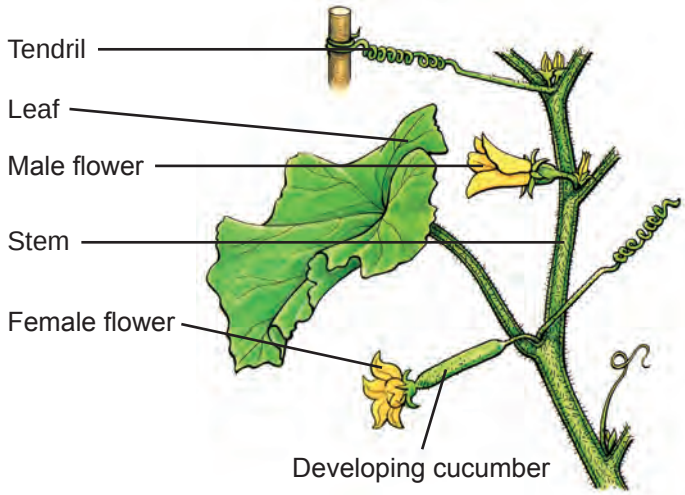
Botanical Facts

Pronunciation: ˈkyü-(ˌ)kəm-bər
Spanish name: pepino
Family: Cucurbitaceae
Genus: *Cucumis*
Species: *C. sativus*

Cucumber is an annual plant of the gourd family, Cucurbitaceae. The cucumber species, *Cucumis sativus,* is divided into two categories: slicing and pickling. Slicing cucumbers are usually served raw in salads, sandwiches, sushi, and various snacks. Varieties include Apple, Lemon, Japanese, Persian, and English. Pickling cucumbers are developed specifically for the pickling process. They are generally smaller than slicing cucumbers with a thick, bumpy skin. Pickling varieties include Heinz, Country Fair, and Miss Pickler. Both categories can be grown outside or in a greenhouse.

For more information, visit:
www.cucurbit.org/family.html
www.lpl.arizona.edu/~bcohen/cucumbers/basics.html
www.botgard.ucla.edu/html/botanytextbooks/economicbotany/Cucurbita/index.html





Source: *Cool as a Cucumber, Hot as a Pepper,* Meredith Sayles Hughes, Lerner Books, 1999.

School Garden: Seasonal Transitions

Spring is prime planting time. Pull up your sleeves, get in the garden, and GROW!

- April is the time to prepare your ground and raised beds for direct seeding and transplanting.
- May through early July is the best time for planting cucumbers, melons, pumpkins, squashes, and gourds.
- Create a garden outside your classroom. There are a number of dwarf varieties in the Cucurbit family that are well-suited to containers. Visit your local nursery and check them out.

For more ideas, visit:
http://celosangeles.ucdavis.edu/Garden_Tips_for_Los_Angeles_County/April.htm

A Slice of Cucumber History

- Cucumbers were first cultivated in India about 3,000 years ago.
- The cucumber arrived in Europe in the Middle Ages. By the 14th century, cucumbers had migrated to England.
- Columbus transported cucumbers to North America from Spain in the early 16th century.
- European trappers, hunters, and explorers traded cucumbers for squash, pumpkins, and gourds with native tribes of the Great Plains and Rocky Mountains.
- These tribes traded with California Native Americans who used the seeds for planting and roasting.

For more information, visit:
www.botgard.ucla.edu/html/botanytextbooks/economicbotany/Cucurbita/index.html
www.lpl.arizona.edu/~bcohen/cucumbers/history.html

Student Advocates

- Water is a vital nutrient for the body. Check the drinking fountains in your school. Do they work? Are they clean? Report findings to site administrators along with a recommended course of action, if needed.
- Conduct a blind taste test using water from tap and bottled water. Be sure both are the same temperature. Which one do students like best? Is there a major difference in taste? What advantages does tap water offer that bottled water does not (minerals, vitamins, convenience, price, etc.)? Have students report findings to school administrators.

Source: Hawthorne School District

For more ideas, visit:
www.epa.gov/earthday

Student Sleuths

1. Is a cucumber a fruit or vegetable? Make a list of produce items that are considered vegetables but are really fruits, and explain the difference.
2. Research the importance of water to health. Why does the body need water?
3. How much water does the body need daily? How do you calculate that amount? What is your plan for getting enough water each day?
4. What are the "compartments" that hold water in our bodies?
5. What does *parthenocarpy* mean?

For information, visit:
www.cdfa.ca.gov
www.lpl.arizona.edu/~bcohen/cucumbers/info.html
www.anrcatalog.ucdavis.edu

Home Grown Facts

- California ranks second in fresh cucumber production nationwide behind Florida.
- California is fifth in the nation in pickling cucumber production.
- Key production counties for fresh market and pickling cucumbers are San Joaquin, San Diego, Ventura, San Benito, and Riverside.*

*2007 Data

Student Activity:
Despite our proximity to such agricultural abundance, we still import many foods from other countries and states. Is shipping food long distances necessary?

- Find out where your food comes from by visiting the produce section of your local store.
- Prepare a proposal for the produce or store manager to include local farmers' produce. Include list of benefits for the store, shoppers, and farmers.
- Compare prices of produce from the grocery store and the local farmers' market. Is there a difference? If so, why do you think this difference exists?

Sources:
http://edis.ifas.ufl.edu/PI041
www.cdfa.ca.gov/statistics/files/CDFA_Sec9.pdf

For more information, visit:
www.epa.gov/students

Adventurous Activities

Science Investigations

- Cucumbers grow best in temperatures from 65-75 degrees Fahrenheit. Convert this to degrees Celsius.
- Place one half of a sliced cucumber in salted water and the other half in plain water. Predict which half will gain or lose weight and how much. Describe what *osmosis* is and how it works in the body.

For more ideas, visit:
www.harvestofthemonth.com

Physical Activity Corner

Stretching prepares the body for exercise by increasing the flow of blood to the muscles. It also helps prevent injuries. Have students stand and do these exercises. Be sure to switch sides and reverse directions.

- **Neck stretch:** Slowly and gently move your head clockwise.
- **Hamstring stretch:** Slowly bend over and reach for your toes. Hold for 15-30 seconds. Keep knees slightly bent.
- **Quadriceps stretch:** Gently bend your right knee behind you, reach back and grab your ankle with your right hand. Bring your heel as close as you can to the back of your thigh or buttocks. Hold for 15-30 seconds. If needed, hold a chair or desk for balance.
- **Triceps stretch:** Extend arms vertically up over your head, slide one hand down the middle of your back and with the other hand grab your elbow and pull it towards the middle of your back. Hold for 15-30 seconds.
- **Extended arm circles:** Extend arms horizontally. Make small circles first, then bigger, then back to small circles.

Adapted from: *Tools for Learning, Fuel for Moving: Performance-Related Nutrition Instructional Materials for Physical Education and Physical Activity Programs, Network for a Healthy California,* 2009.

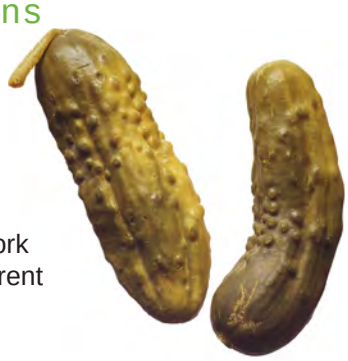
For more ideas, visit:
www.cdph.ca.gov/programs/cpns/Documents/Network-ShapeofYoga.pdf

Just the Facts

- There are over 800 species in the Cucurbitaceae family and they include cucumbers, gourds, melons, pumpkins, and squashes.
- The inside of a cucumber can be up to 20 degrees cooler than the exterior.
- Per capita, Americans eat about eight pounds of pickles per year.

For more information, visit:
www.lpl.arizona.edu/~bcohen/cucumbers/history.html

Cafeteria Connections



- Coordinate with school nutrition staff and ask them to provide different varieties of cucumbers* and pickles.
- Contact your local farmers' market to determine which produce is at its peak and work with a farmer to provide different fruits and vegetables for the tasting event.
- Design small information cards for each featured produce item and include: name, where it is grown, how to eat it, what key nutrients it provides, how to store it, where to buy it, and how much it costs.
- Invite parents to participate and offer suggestions for using the cards at home.

*Refer to *Botanical Facts* (page 2) for varieties.

Adapted from: *Popular Team Nutrition Events: An Idea Book,* USDA, 2005. **www.fns.usda.gov/tn/Resources/popularevents.pdf**

Literature Links

- Enlist your school librarian or local dietitian to help you find resources on nutrition and plan activities listed in this newsletter.
- Make the recipe from the *Cooking in Class* activity (page 1) and invite your librarian to read a book to your class and lead the activity.

For a list of book ideas, visit:
www.harvestofthemonth.com

This material was produced by the California Department of Public Health, *Network for a Healthy California,* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © California Department of Public Health 2009.

CHAMPIONS for CHANGE
Network for a Healthy California

Daikon Radish - Learn About Daikon Radish
(pronounced DI-kuhn; DI-cone)

How To Lower Cholesterol Simple Ways To Lower Cholesterol Find Free Recipes & Diet Tips Today cholesterolselfdefense.com

Free Diabetes Meal Plan Eat Right & Lose Weight to Control Diabetes. Free from Everyday Health www.EverydayHealth.com/Diab

Gluten Free Coconut Flour Certified organic high in protein & fiber. Gluten free. Free recipes. TropicalTraditions.com

AdChoices

Picture courtesy of Evergreen Y.H. Enterprises - sellers of oriental vegetable seeds (to order seeds, click on their name)

Description - The word Daikon actually comes from two Japanese words: dai (meaning large) and kon (meaning root). Daikon is is root vegetable said to have originated in the Mediterranean and brought to China for cultivation around 500 B.C. Roots are large, often 2 to 4 inches in diameter and 6 to 20 inches long. There are three distinct shapes - spherical, oblong and cylindrical.

Radishes have been developed in the Orient which develop very large roots, reportedly up to 40 or 50 pounds, and with leaf top spreads of more than 2 feet (they require a long growing season for such development. These types are grown in the U.S., mainly by Asians for use in oriental dishes). Most of the commonly available Chinese radishes are white, but some are yellowish, green or black.

More daikon is produced in Japan than any other vegetable. Many different varieties of this versatile vegetable are cultivated, depending on the region.

These radishes are generally marketed in bunches of three or four roots for the small variety and one to three roots for the larger variety, depending on size.

Other Names - Lo pue (Hmong); daikon (Japanese); lor bark (Cantonese Chinese); labanos (Filipino); cu-cai trang (Vietnamese). Also known as an oriental radish, Chinese radish, and icicle radish.

Culture - Culture is similar to the common radish, except that daikons are bigger and need more space and a longer growing season. A deep, loose, moist, fertile soil is required. Plant in late winter or early spring for spring and summer use and in July for fall harvest.

Availability - Chinese radishes are grown commercially in Texas, primarily near Houston in south Texas. Major production is in California. They can be found on the market 12 months out of the year, especially in areas having an Oriental population.

Selection - As with any root crop, look for Chinese radishes that are free of growth cracks and bruises with firm and crisp roots. Chinese radishes keep well in refrigeration if they are placed in a sealed container or plastic bag to maintain high humidity.

Storage - Chinese radishes will keep well in the refrigerator if they are placed in a sealed container or plastic bag in order to maintain high humidity.

Preparation - This is an extremely versatile vegetable that can be eaten raw in salads or cut into strips or chips for relish trays. It also can be stir-fried, grilled, baked, boiled or broiled. Use the daikon as you would a radish. It may be served raw in salads or grated for use as a condiment (if you don't have a Japanese-style grater, use a cheese grater and grate just before serving), pickled, or simmered in a soup. They are also preserved by salting as in making sauerkraut. Daikon also is used in soups and simmered dishes. To prepare, peel skin as you would a carrot and cut for whatever style your recipe idea calls for. Not only is the root eaten, but the leaves also are rich in vitamin C, beta carotene, calcium, and iron, so they are worth using instead of discarding.

A Japanese secret to cooking daikon is to use water in which rice has been washed or a bit of rice bran added (this keeps the daikon white and eliminates bitterness and sharpness}.

For Chips, Relish Tray Sticks or Stir Fries - Simply peel Daikon with a peeler and cut crossways for thin chips. Dip thin chips in ice water and they will crisp and curl for a Daikon chip platter with your favorite sour cream or yogurt dip. Cut into julienne strips for relish trays, salads or stir-frys.

Nutrition Information - Daikon is very low in calories. A 3 ounce serving contains only 18 calories and provides 34 percent of the RDA for vitamin C. Rich in vitamin C, daikon contains active enzymes that aid digestion, particularly of starchy foods. Select those that feel heavy and have lustrous skin and fresh leaves.

University of Phoenix® Online and Campus Degree Programs. Official Site - Classes Start Soon. Phoenix.edu

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AdChoices ▷

Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

There is no shortage of fruits and vegetables in California – even in winter. Students need at least 2½ - 6½ cups of fruits and vegetables every day. All forms count toward their daily needs – fresh, frozen, canned, dried, and 100% juice. Studies show that students who eat more fruits and vegetables perform better in school. Remind school nutrition staff, parents, and students that there are many ways to eat the recommended number of cups each day. Use *Harvest of the Month* to help students add more fruits and vegetables into meals and snacks and be more active every day.

Exploring California Grapefruit: Taste Testing

Getting Started:

- Find a local citrus grower or retail store to donate fruit for taste tests.
- Review *Taste Testing* and *Classroom Cooking Tips*.*

What You Will Need (per group):

- 1 pink and/or red grapefruit; 1 white/yellow grapefruit; 1 cup 100% grapefruit juice
- Small paper cups (for grapefruit juice) and napkins
- Printed Nutrition Facts labels for grapefruit and grapefruit juice*

Activity:

- Explore the look, feel, and smell of each grapefruit and juice. Make a sensory chart and record observations.
- Peel and section fruit. Pour juice evenly into cups.
- Taste and compare each. Record observations and discuss as a class.
- Review Nutrition Facts labels. Discuss similarities and differences. Is the fruit or juice an excellent source of any nutrient (provides more than 20% of Daily Value)? Complete *Student Sleuths #1* (page 3) for follow-up activity.
- Take a class poll of students' preferences for each variety. Create a graph of the results and share with school nutrition staff.

*Download from **www.harvestofthemonth.com**.

For more ideas, reference:
Kids Cook Farm-Fresh Food, CDE, 2002.

Nutrition Facts

Serving Size: ½ medium grapefruit (123g)
Calories 46 — Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 12g	4%
Dietary Fiber 1g	5%
Sugars 9g	
Protein 1g	

Vitamin A 6% — Calcium 1%
Vitamin C 78% — Iron 1%

GRAPEFRUIT

Cooking in Class: Breakfast Fruit Cup

Ingredients:

Makes 32 tastes at ¼ cup each

- 4 large pink or red grapefruit
- 4 medium bananas, peeled and sliced
- ¼ cup raisins
- 1⅓ cups lowfat vanilla yogurt
- 2 teaspoons ground cinnamon
- Small paper cups and spoons

1. Peel grapefruit and remove seeds. Slice into bite-size pieces.
2. In large bowl, combine fruit.
3. Divide fruit into cups. Top each with a spoonful of yogurt.
4. Sprinkle with cinnamon and serve.

Adapted from: *Everyday Healthy Meals, Network for a Healthy California,* 2007.

For nutrition information, visit:
www.harvestofthemonth.com

Reasons to Eat Grapefruit

A half of a medium grapefruit is:

- An excellent source of vitamin C.
- A source of many other nutrients, such as potassium, folate, thiamin, vitamin A, vitamin B_6, and fiber.
- Low in calories.*

*Learn about calories on page 2.

For information, visit:
www.nal.usda.gov/fnic/foodcomp/search

What Are Calories?

- Calories measure the energy found in food.
- The body needs energy to function, which is why food is necessary for life.
- Our bodies burn calories found in carbohydrates, proteins, and fats for energy. These nutrients are released from food during digestion, then absorbed into the bloodstream, and converted to glucose, or blood sugar.
- One pound of body fat is equivalent to 3,500 calories.
- The body is very efficient in storing energy. The main form of stored energy is body fat. A small amount of carbohydrates is stored in the liver and muscles in the form of glycogen. Glycogen is then converted to glucose and is used by the body for energy.

Sources:
www.eatright.org
http://jn.nutrition.org/nutinfo

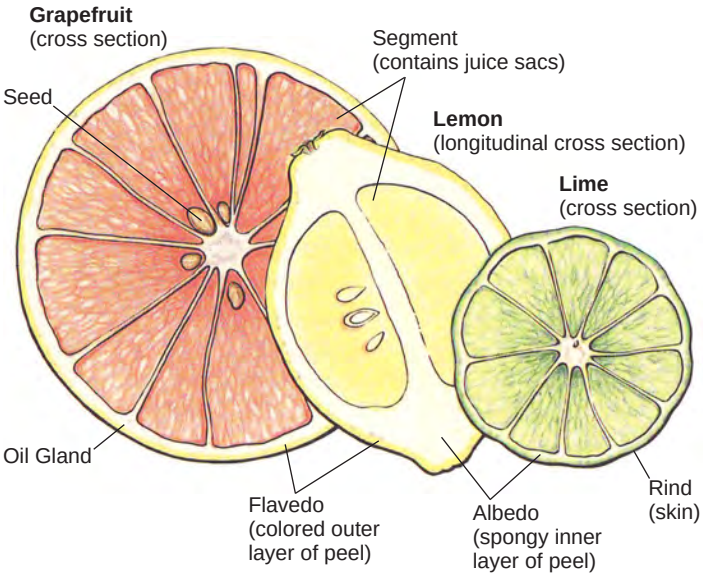
How Much Do I Need?

Half of a medium grapefruit is about ½ cup of fruit. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. Look at the chart below and have students determine how many cups they need to eat each day. As a class, have students write down their goals and how they plan to eat the recommended daily amounts and get at least 60 minutes of physical activity every day.

Recommended Daily Amounts of Fruits and Vegetables*

	Kids, Ages 5-12	**Teens and Adults, Ages 13 and up**
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.



Source: *Tall and Tasty: Fruit Trees* by Meredith Sayles Hughes, Lerner Publications Company, 2000.

Botanical Facts

Pronunciation: ‘grāp-,früt
Spanish name: toronja
Family: Rutaceae
Genus: *Citrus*
Species: *Citrus x paradisi*

Botanists believe grapefruit was an accidental hybrid of the two primal citrus species, *Citrus maxima* (pummelo) and *Citrus sinensis* (sweet orange). Citrus is a subtropical plant and, like all citrus fruit, grapefruit grow on flowering, evergreen trees. They are distinguishable by the way in which they grow in clusters – like grapes – on trees. They are also one of the largest citrus and have an oblate shape (round with flat spheres).*

There are more than 20 varieties of grapefruit grown in the United States. They are commonly grouped into three cultivars determined by the fruit’s pulp color: white/yellow, pink, and red. The color is a result of the fruit’s genetic makeup, skin pigmentation, and ripeness. The flesh is more acidic than other sweeter citrus varieties, though the pink- and red-pulped varieties have been produced with less acidity.

White/yellow varieties	Duncan, Marsh, Melogold, Oroblanco
Pink varieties	Chandler, Foster, Thomson
Red varieties	Ruby Red, Rio Red, Flame

*Refer to *Oranges* and *Mandarins* newsletters for more information about citrus fruit.

For more information, visit:
www.cfaitc.org
www.ccpp.ucr.edu/variety/grapefruits.html

How Does Grapefruit Grow?

Grapefruit trees are well-suited for warm, subtropical climates. California’s climate, fertile soil, and diverse land resources allow for year-round production of many citrus varieties, including grapefruit. Grapefruit can grow on a range of soil types from clay to alkaline to acidic soils, but do best in soils that are a mixture of clay, silt, and sand.

Grapefruit trees grow from 30 to 50 feet tall. Growers may prune trees to limit the height to 15 to 25 feet for easier harvesting. The trees produce four-petaled, white flowers. Temperature affects the length of time it takes from flower blossom to fruit maturity. For example, in the cooler area of Riverside, it can take up to 13 months. In the desert area of the Imperial Valley, it takes about eight months. Grapefruit are picked when fully ripe. Citrus trees never go dormant, but their root systems become inactive when ground temperatures drop below 50 F. Drought conditions can have the same impact.

Helpful Hint:

For information about how citrus trees grow, refer to the *Oranges* and *Mandarins* newsletters or *Grapefruit Botanical Image* on **www.harvestofthemonth.com**.

For more information, reference:
Tall and Tasty: Fruit Trees by Meredith Sayles Hughes, Lerner Publications Company, 2000.

School Garden: Growing Partnerships

Ask wholesale or local nurseries to partner with your school. Ask them to:

- Donate supplies, equipment, or seeds.
- Host a class field trip and demonstrate seasonal tasks for agricultural crops, like citrus.
- Present to class in school garden (or at nursery) about edible landscaping and gardening tips.
- Offer mentorships or training positions to older students.
- Display students' fact sheets on how plants grow.*
- Distribute the community newsletters to customers.**

*Refer to *Student Sleuths #3* for making fact sheets.
Download from **www.harvestofthemonth.com.

For basic gardening tips, visit:
http://gardening.wsu.edu/text/lsbasic.htm

Home Grown Facts

- The United States is the world's leading grower of grapefruit.
- California is the nation's second leading producer (behind Florida) of both citrus and grapefruit.
- California grown grapefruit is available year-round while other states' supplies are seasonal.
- Nearly all of California's grapefruit supply (88%) is sold as fresh produce.
- Riverside, Tulare, Imperial, and San Diego counties produce over 90% of all grapefruit in California.

Activity:

- Research how snails and slugs can devastate citrus crops. What methods do growers use to control them?
- Select two different citrus growing regions in the world: one in the United States and one in a foreign country. Compare and contrast the climates, land, and growing methods.

For more information, visit:
www.cdfa.ca.gov
www.cfaitc.org

A Slice of Grapefruit History

- The first citrus trees grew in Asia over 4,000 years ago.
- An accidental hybrid, the first grapefruit was produced in the West Indies (Caribbean) in the mid-1700s. It was often called the "forbidden fruit."
- The first American grapefruit seedlings grew in Florida around 1823. For many years, it was grown as a novelty for tourists.
- The Ruby Red grapefruit was also an accidental discovery by Texas citrus growers in 1929. It was the first grapefruit variety to receive a United States patent.

Activity:

- Have students research and develop a history timeline of other citrus varieties such as pummelos, lemons, or limes.

For more information, visit:
www.hort.purdue.edu/newcrop/morton/grapefruit.html
www.texasweet.com/About-Texas-Citrus/Texas-Grapefruit-History

Student Advocates

California grown citrus are in peak season in winter, but most varieties are available year-round. Citrus can be consumed fresh, canned, or as 100% juice, and with any meal. All citrus provide an excellent source of vitamin C and a source of many other essential vitamins and minerals.

Student Activity:

- Find or create a healthy recipe that uses at least one citrus variety for each of these meal categories: breakfast, lunch, dinner, snack.
- Conduct a nutrient analysis of recipe. If recipe is unhealthy, find substitutions to improve the nutrition. These are a few key criteria*:
  - Total fat is equal to or less than 35% of total calories.
  - Each serving contains less than 600 mg of sodium.
  - Added sugars may not exceed 15% of total calories.
  - Each serving must contain at least a ½ cup of fruit or vegetable (or 1 cup leafy greens, ¼ cup dried fruit, or ½ cup 100% juice) per 250 calories.
- Compile recipes with classmates to create a Citrus Cookbook. Include the nutrition information for each recipe and Nutrition Facts labels for each citrus variety.**
- Share cookbook with family members, school nutrition staff, retail stores, or use for fund-raisers.

*Excerpted from CDC's recipe criteria guidelines.
Download labels from **www.harvestofthemonth.com.

Student Sleuths

1. Use Nutrition Facts labels from *Taste Testing* activity (page 1). Find nutrient information for at least three other citrus varieties like lemons, limes, and kumquats. (Hint: Use similar serving sizes.) Choose five nutrients (e.g., vitamin C, vitamin A, calcium, fiber, potassium). Make bar graphs to compare all varieties.
2. Compare Nutrition Facts labels for 100% grapefruit juice and another juice drink. (Hint: Use similar serving sizes.) Describe the nutrient differences. Make a list of the ingredients in both. Do an activity to demonstrate the difference in teaspoons of added sugar for a juice drink.
3. Create fact sheet cards of how citrus trees grow. Include important growing information: soil type, climate, irrigation, propagation, planting, harvesting, and amount of time to bear fruit. Display on index cards with a drawing of fruit tree on one side and growing information on opposite side. Share fact sheet cards with local nurseries.*

*Refer to *School Garden* activity above for information.

For information, visit:
www.nal.usda.gov/fnic/foodcomp/search
www.eatright.org/ada/files/Juice.pdf
www.hort.purdue.edu/newcrop/morton/grapefruit.html

Adventurous Activities

Science Investigation

- Research and write a report on how seedless citrus fruit trees are reproduced. Include information such as how and when this reproduction process evolved. Describe the benefits and problems of producing seedless citrus fruit trees, including benefits or problems for consumers.

Social Studies

- From 2005-2006, grapefruit exports increased 76% and became one of California's top 20 agricultural exports. Hypothesize why this happened. Then, research why it occurred and find out if grapefruit continues to be one of California's top exports.

Adapted from: www.cfaitc.org/Commodity/pdf/CitrusFruits.pdf

For more ideas, visit:
www.harvestofthemonth.com

Cafeteria Connections & Literature Links

Collaborate with the library and cafeteria to conduct a slogan contest to promote citrus fruits.

- Select theme for a promotional contest. Example: How is citrus good for you?
- Display different citrus varieties at tables in cafeteria and library. Provide taste samples to students in cafeteria. Feature many varieties like oranges, grapefruit, mandarins, kumquats, pummelos, lemons, and limes.
- Make a poster display where students can vote for their favorite variety.
- Set up a display in cafeteria with books from library and nutrition information about citrus varieties. Print and post CDE's Nutrient Graphs.*
- Have blank "bookmarks" (2x6" plain cardstock) at book table for students to submit creative citrus slogans. Encourage use of artwork.
- Announce winning slogan(s) during lunch or school assembly. Convert bookmark to a full-size poster and display on campus.
- Laminate all bookmarks and keep in the library for student use.

*Download from **www.harvestofthemonth.com**.

Helpful Hint:

For an annotated list of agriculture-related books, download a free copy of the Teacher Resource Guide from **www.cfaitc.org**. Developed by California Foundation for Agriculture in the Classroom, this guide also includes field trip ideas, agricultural Web sites, resources, and grant lists.

Physical Activity Corner

Physical activity is a game, sport, exercise, or other action that involves moving the body, especially if it makes the heart beat faster. Have a class discussion about what counts as physical activity and why students should get at least 60 minutes of activity every day.

Activity:

- Create a physical activity journal. Make a daily chart for logging minutes: before school, during school, after school, and total minutes.
- Log physical activity minutes each day for one full week and list what you did. (Ex: 15 minutes, walk to school)
- Compare results with classmates.
- Which activities did you do the most?
- Which activities would you like to try?
- If average daily physical activity time is below 60 minutes, set a goal to reach 60 minutes. Write down five ways to get more activity.
- If average daily time is at or above 60 minutes, write down five ways to maintain or increase activity.
- Repeat journal tracking for three additional weeks to meet goals.

Adapted from: *School Idea & Resource Kit, Network for a Healthy California—Children's Power Play! Campaign,* 2009.

For more ideas, visit:
www.networkforahealthycalifornia.net/powerplay
www.catchinfo.org

Just the Facts

- Grapefruit was named by a Jamaican farmer who noticed the way it grows in clusters – like grapes – on a tree. Grapefruit has grown in clusters with as many as 25 fruits.
- Grapefruit's flavor and juiciness are not determined by color, but by the lateness of the season when they are harvested, the specific variety, and how the fruit is handled.
- Florida grown grapefruit have a thinner rind and are typically juicier and less pulpy than California grown grapefruit, which are easier to peel and segment.
- In the 1930s, the Hollywood Diet or "Grapefruit Diet" became a popular fad that guaranteed a loss of "10 pounds in 10 days" by eating half of a grapefruit before each meal. The grapefruit was said to have fat-burning enzymes, but no such enzymes exist.

For more information, visit:
www.fruitsandveggiesmatter.gov/month/grapefruit.html

This material was produced by the California Department of Public Health, *Network for a Healthy California,* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households, and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © California Department of Public Health 2009.

CHAMPIONS for CHANGE
Network for a Healthy California

Grape

From Wikipedia, the free encyclopedia

A **grape** is a non-climacteric fruit, specifically a berry, that grows on the perennial and deciduous woody vines of the genus *Vitis*. Grapes can be eaten raw or they can be used for making jam, juice, jelly, vinegar, wine, grape seed extracts, raisins, molasses and grape seed oil.

Grape

"White" table grapes

Contents

- 1 History
- 2 Description
- 3 Grapevines
- 4 Distribution and production
- 5 Table and wine grapes
- 6 Seedless grapes
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  - 8.2 Resveratrol
  - 8.3 Anthocyanins and other phenolics
  - 8.4 Seed constituents
  - 8.5 Concord grape juice
- 9 Religious significance
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- 11 See also
- 12 Sources
- 13 Further reading
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Grapes, purple or green

Nutritional value per 100 g (3.5 oz)	
Energy	288 kJ (69 kcal)
Carbohydrates	18.1 g
- Sugars	15.48 g
- Dietary fiber	0.9 g
Fat	0.0 g
Protein	0.72 g
Thiamine (vit. B_1)	0.069 mg (6%)
Riboflavin (vit. B_2)	0.07 mg (6%)
Niacin (vit. B_3)	0.188 mg (1%)
Pantothenic acid (B_5)	0.05 mg (1%)
Vitamin B_6	0.086 mg (7%)
Folate (vit. B_9)	2 µg (1%)
Vitamin B_{12}	0 µg (0%)
Vitamin C	10.8 mg (13%)
Vitamin K	22 µg (21%)
Calcium	10 mg (1%)
Iron	0.36 mg (3%)
Magnesium	7 mg (2%)

History

The cultivation of the domesticated grape began 6,000 -8,000 years ago in the Near East.[1] Yeast, one of the earliest domesticated microorganisms, occurs naturally on the skins of grapes, leading to the innovation of alcoholic drinks such as wine. First traces of red wine are seen in ancient Armenia where apparently, to date, the oldest winery was found, dating to around 4,000 BC. By the 9th century AD the city of Shiraz was known to produce some of the finest wines in the Middle east. Thus it has been proposed that Syrah red wine is named after Shiraz, a city in Persia where the grape was used to make Shirazi wine. Ancient Egyptian hieroglyphics record the cultivation of purple grapes, and history attests to the ancient Greeks, Phoenicians and Romans growing

purple grapes for both eating and wine production. Later, the growing of grapes spread to Europe, North Africa, and eventually North America.

Native purple grapes belonging to the *Vitis* genus proliferated in the wild across North America, and were a part of the diet of many Native Americans, but were considered by European colonists to be unsuitable for wine. The first Old World *Vitis vinifera* purple grapes were cultivated in California. [*citation needed*]

Manganese	0.071 mg (3%)
Phosphorus	20 mg (3%)
Potassium	191 mg (4%)
Sodium	3.02 mg (0%)
Zinc	0.07 mg (1%)

Percentages are relative to US recommendations for adults.
Source: USDA Nutrient Database
(http://www.nal.usda.gov/fnic/foodcomp/search/)

Description

Grapes are a type of fruit that grow in clusters of 15 to 300, and can be crimson, black, dark blue, yellow, green, orange, and pink. "White" grapes are actually green in color, and are evolutionarily derived from the purple grape. Mutations in two regulatory genes of white grapes turn off production of anthocyanins which are responsible for the color of purple grapes.[2] Anthocyanins and other pigment chemicals of the larger family of polyphenols in purple grapes are responsible for the varying shades of purple in red wines.[3][4] Grapes are also used in some kinds of confectionery. Grapes are typically an ellipsoid shape resembling a prolate spheroid.

Grapevines

Main article: Vitis

Most grapes come from cultivars of *Vitis vinifera*, the European grapevine native to the Mediterranean and Central Asia. Minor amounts of fruit and wine come from American and Asian species such as:

Yaquti Grapes production in 2008, Iran.

- *Vitis labrusca*, the North American table and grape juice grapevines (including the concord cultivar), sometimes used for wine, are native to the Eastern United States and Canada.
- *Vitis riparia*, a wild vine of North America, is sometimes used for winemaking and for jam. It is native to the entire Eastern U.S. and north to Quebec.
- *Vitis rotundifolia*, the muscadines, used for jams and wine, are native to the Southeastern United States from Delaware to the Gulf of Mexico.
- *Vitis amurensis* is the most important Asian species.

Distribution and production

According to the Food and Agriculture Organization (FAO), 75,866 square kilometres of the world are dedicated to grapes. Approximately 71% of world grape production is used for wine, 27% as fresh fruit, and 2% as dried fruit. A portion of grape production goes to producing grape juice to be reconstituted for fruits canned "with no added sugar" and "100% natural". The area dedicated to vineyards is increasing by about 2% per year.

The following table of top wine-producers shows the corresponding areas dedicated to grapes for wine making:

Country	Area dedicated
Spain	11,750 km^2
France	8,640 km^2
Italy	8,270 km^2
Turkey	8,120 km^2
United States	4,150 km^2
Iran	2,860 km^2
Romania	2,480 km^2
Portugal	2,160 km^2
Argentina	2,080 km^2
Chile	1,840 km^2
Australia	1,642 km^2
Armenia	1,459 km^2
Lebanon	1,122 km^2

Concord is a variety of North American *labrusca* grape

Top Ten Grapes Producers – 8 October 2009		
Country	**Production (Tonnes)**	**Footnote**
Italy	8,519,418	F
China	6,787,081	F
United States	6,384,090	F
France	6,044,900	F
Spain	5,995,300	F
Turkey	3,612,781	F
Iran	3,000,000	F
Argentina	2,900,000	F
Chile	2,350,000	F
India	1,667,700	F
World	**67,221,000**	**A**

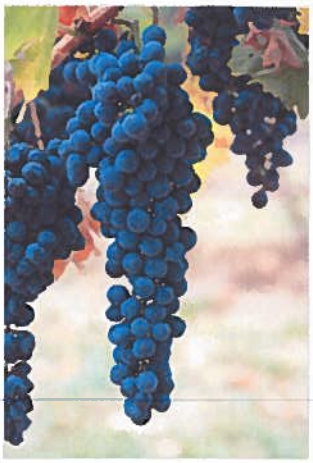
No symbol = official figure, P = official figure, F = FAOSTAT 2007, * = Unofficial/Semi-official/mirror data, C = Calculated figure, A = Aggregate (may include official, semi-official or estimates);

Source: Food And Agricultural Organization of United Nations: Economic And Social Department: The Statistical Division (http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor)

There are no reliable statistics that break down grape production by variety. It is, however, believed that the most widely planted variety is Sultana, also known as Thompson Seedless, with at least 3,600 km^2. (880,000 acres) dedicated to it. The second most common variety is Airén. Other popular varieties include Cabernet Sauvignon, Sauvignon blanc, Cabernet Franc, Merlot, Grenache, Tempranillo, Riesling and Chardonnay.[5]

Table and wine grapes

Commercially cultivated grapes can usually be classified as either table or wine grapes, based on their intended method of consumption: eaten raw (table grapes) or used to make wine (wine grapes). While almost all of them belong to the same species, *Vitis vinifera*, table and wine grapes have significant differences, brought about through selective breeding. Table grape cultivars tend to have large, seedless fruit (see below) with relatively thin skin. Wine grapes are smaller, usually seeded, and have relatively thick skins (a desirable characteristic in winemaking, since much of the aroma in wine comes from the skin). Wine grapes also tend to be very sweet: they are harvested at the time when their juice is approximately 24% sugar by weight. By comparison, commercially produced "100% grape juice", made from table grapes is usually around 15% sugar by weight.[6]



Wine grapes on the vine

Seedless grapes

Although grape seeds contain many nutrients, some consumers choose seedless grapes; seedless cultivars now make up the overwhelming majority of table grape plantings. Because grapevines are vegetatively propagated by cuttings, the lack of seeds does not present a problem for reproduction. It is, however, an issue for breeders, who must either use a seeded variety as the female parent or rescue embryos early in development using tissue culture techniques.

There are several sources of the seedlessness trait, and essentially all commercial cultivators get it from one of three sources: Thompson Seedless, Russian Seedless, and Black Monukka, all being cultivars of *Vitis vinifera*. There are currently more than a dozen varieties of seedless grapes. Several, such as Einset Seedless, Reliance and Venus, have been specifically cultivated for hardiness and quality in the relatively cold climates of northeastern United States and southern Ontario.[7]

An offset to the improved eating quality of seedlessness is the loss of potential health benefits provided by the enriched phytochemical content of grape seeds (see Health claims, below).[8][9]

Raisins, currants and sultanas

In most of Europe, dried grapes are referred to as "raisins" or the local equivalent. In the UK, three different varieties are recognized, forcing the EU to use the term "Dried vine fruit" in official documents.

A *raisin* is any dried grape. While *raisin* is a French loanword, the word in French refers to the fresh fruit; *grappe* (from which the English *grape* is derived) refers to the bunch (as in *une grappe de raisins*).

Raisins

A *currant* is a dried Zante Black Corinth grape, the name being a corruption of the French *raisin de Corinthe* (Corinth grape). *Currant* has also come to refer to the blackcurrant and redcurrant, two berries unrelated to grapes.

A *sultana* was originally a raisin made from Sultana grapes of Turkish origin (known as Thompson Seedless in the United States), but the word is now applied to raisins made from either white grapes, or red grapes which are bleached to resemble the traditional sultana.

Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-in-Hand

Breakfast is the most important meal of the day. Research shows a direct relationship between a nutritious breakfast and educational achievement, including improved attendance. Encourage your students to start the day with a healthy breakfast that includes at least one fruit or vegetable. **Harvest of the Month** connects with core curricula to give students the chance to explore, taste and learn about the importance of eating fruits and vegetables. It links the classroom, cafeteria, home and community to motivate and support students to make healthy food choices and be physically active every day.

Taste Testing with California Green Beans

Taste testing activities allow students to experience the featured produce with their senses, engaging them in the learning process and creating increased interest, awareness and support for increasing consumption of fruits and vegetables.

Tools:

- Variety of raw, cooked (steamed) and canned green beans*
- Enough beans for students to sample each variety
- Printed nutrition fact labels for each green bean variety*
- Pencil, paper

*See *Eat Your Colors* on page 2 for varieties; nutrition labels available online at **www.nutritiondata.com**

Activity:

- Make three columns on paper for raw, cooked and canned beans
- Taste raw green beans and record the color, texture, smell, sound and taste
- Look at the nutrition label for raw beans and record the sodium, sugar, calories and vitamin contents
- Repeat with the steamed and canned green beans
- Compare and contrast the characteristics, as well as the differences in the nutrient content for each variety

Classroom Discussion:

- Discuss the differences and similarities in characteristics
- Hypothesize what factors contributed to increased or decreased nutrient levels

For more ideas, reference:

School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39-42.

Nutrition Facts

Serving Size: 1 cup beans, snap (110g)

Calories 34 — Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 7mg	0%
Total Carbohydrate 8g	3%
Dietary Fiber 4g	15%
Sugars 2g	
Protein 2g	

Vitamin A 15% Vitamin C 30% Calcium 4% Iron 6%

Source: **www.nutritiondata.com**

Reasons to Eat Green Beans

One cup of raw snap green beans provides:

- Thirty percent of the recommended Daily Value (DV) for Vitamin C — an excellent source.
- A good source (15% DV) for fiber and Vitamin A.
- Many essential vitamins including thiamin, riboflavin, niacin, Vitamin B6 and Vitamin K.

August Events

- Family Fun Month
- Farmers' Market Week
- California State Fair

Cooking in Class: Green Beans in Dip

Ingredients:

Makes 32 servings: ½ cup green beans and ¼ cup salsa dip per serving

- 16 cups green beans, washed, ends cut off
- 4 cups light or fat free sour cream
- 4 cups fresh salsa

Arrange bite-size green beans on platter. In a small bowl, mix sour cream and salsa. Serve immediately.

Adapted from: *Healthy Latino Recipes, Made With Love, Latino 5 a Day Campaign,* 2004.

For more ideas, reference:

Kids Cook Farm-Fresh Food, CDE, 2002.

GREEN BEANS

August

Eat Your Colors

Fruits and vegetables come in a rainbow of colors. Eat a variety of colorful fruits and vegetables every day — red, yellow/orange, white, green and blue/purple. Although their pods may be different colors (green, gold, purple, red or streaked), green beans are part of the green color group.

- Green fruits and vegetables help maintain vision health and strong bones and teeth. They may also lower the risk of some cancers. Examples of green bean varieties include the Yardlong, Hyacinth, Blue Lake (green pod), Haricot Verts (baby French green beans), Golden Wax (golden pod), Purple King (purple pod), Dragon's Tongue (streaked pod) and Red Swan (red pod).

For more information, visit:
www.fruitsandveggiesmatter.gov
www.harvestofthemonth.com

What's in a Name?

Pronunciation: grēn bēn
Spanish name: ejote
Family: Fabaceae
Genus: *Phaseolus*
Species: *P. vulgaris*

The common bean is a species of the herbaceous annual plant of the Fabaceae family. These plants are grown worldwide specifically for its edible beans. There are two main classifications of beans — edible pod beans and shell beans — and the colors and shapes of pods vary tremendously. In fact, there are more than 200 species of beans.

Green beans are edible pod beans that can be grown as bush beans or pole (running) beans. They are often referred to as *string beans* because originally a fibrous string ran along the seam of the bean pod. The string was noticeable when snapping off the end of the pod. This snapping noise is the reason for its other common nickname, *snap beans.* The pod color of green beans can be green, golden, purple, red or streaked, but the beans inside the pod are always green. Green beans range in shape from thin "fillet" to wide "romano" types.

For more information, visit:
http://plantanswers.tamu.edu/publications/vegetabletravelers/index.html

Veggie Facts

Green beans are nitrogen fixers, which means they have the ability to draw nitrogen from the air and return it to the soil. Because of this, farmers often plant beans and legumes in their crop rotations to replenish the soil.

Fresh beans are classified into two basic categories: edible pod beans and shell beans. Green beans are the most popular edible pod bean, while lima beans are the most common shell bean sold in the United States.

Compared to dry or shell beans, green beans provide less starch and protein, and more Vitamin A, Vitamin C and calcium.

How Do Green Beans Grow?

Green beans are sensitive to cold temperatures and frost, and so they are planted in the spring after the danger of frost has passed. Seeds of all varieties are generally planted one inch deep. Bush bean seeds should be planted two inches apart in rows. Growers only water seeds just after planting or plant them right before a heavy rain, as seeds of most varieties tend to crack and do not germinate properly if the soil's moisture content is too high.

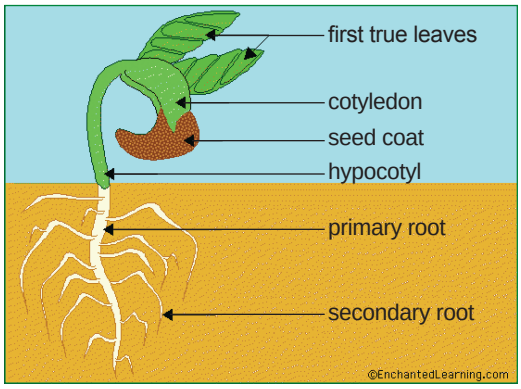
Once planted, the ovary develops into the pod, which may be six inches or more in length. The pod contains the seeds, which may be white, brown, red, blue or black. Each seed consists of a coat that contains two cotyledons (where food is stored); a hypocotyl (the lower portion of which develops into the root); and an epicotyl (the young stem from which the plumule or primary leaf bud develops).

Beans have shallow and fairly weak root systems, so growers practice frequent, shallow cultivation and hoeing to keep small weeds and grasses under control. Deep cultivation can injure the plant roots and delay harvests or reduce harvest yields.

Harvesting takes place when the pods are firm, crisp and fully elongated, but before the seed within the pod has developed completely. Beans are generally picked in the afternoon or after the morning dew and when the plants are thoroughly dry, as the moisture can spread bean bacterial blight, a disease that seriously damages plants.

The bean plant continues to form new flowers and produce more beans if pods are continually removed before the seeds mature. Growers also assure a continuous supply of snap beans by planting every two to four weeks until early August.

For more information, visit:
http://rics.ucdavis.edu/postharvest2/Produce/ProduceFacts/Veg/snapbeans.shtml



Student Sleuths

1. Why is nitrogen important for plant growth?
2. What is riboflavin? Name three things it does for the body.
3. Illustrate the two cotyledons, hypocotyl, epicotyl and plumule that form during green bean growth.
4. What is a dicot?

For information, visit:
www.fruitsandveggiesmatter.gov/month/fresh_beans.html
www.ipmcenters.org/cropprofiles/docs/cabeans-green.html

A String of Green Bean History

The common bean was cultivated in ancient Mesoamerica as early as 8,000 years ago. Beans were even found in the mummy covering of a woman in a Peruvian cemetery dating back to pre-Inca civilization. Green beans and all 200 varieties of *P. vulgaris* originated in the tropical southern part of Mexico, Guatemala, Honduras and part of Costa Rica. They spread from this center of origin to North and South America long before European explorers ever arrived.

Early explorers, including Christopher Columbus, found the climbing beans typically planted alongside maize. The first drawings of the bush bean were recorded by the revolutionary German doctor Leonhart Fuchs in 1542, and were also described in detail by explorers John Verazanno and Samuel de Champlain.

When first discovered, the green beans had a "string" that ran on the outer curve of the pod shell. This led to the nickname "string beans." (See *What's in a Name?* on page 2 for details.) Botanists, however, found a way to remove the string through breeding and in 1894 the first successful stringless bean plant was cultivated. Today, nearly all varieties of edible pod beans are grown without strings.

For more information, visit:
www.extension.iastate.edu/healthnutrition/foodrecipeactivity/food

Home Grown Facts

California ranks second in national production of green beans.

Ninety-five percent of the green bean crop in California is marketed as fresh and about 5 percent as processed.

Tulare, Orange and San Luis Obispo counties are the largest green bean-producing areas in California.

Other counties that contribute acreage to green beans include Riverside, Santa Clara, Contra Costa, Stanislaus, San Diego, San Mateo and San Bernardino.

Bush-type green beans are the predominant variety grown for commercial production in California.

For more information, visit:
www.anrcatalog.ucdavis.edu/pdf/7240.pdf

Student Sleuths

1. What were some of the harvesting techniques for green beans practiced by Native Americans as observed by early explorers?
2. What does the "three sisters of life" refer to in green bean history? (Hint: Question No.1 should help to find this answer.)
3. Map the California counties where green beans are grown for commercial production.

For information, visit:
www.fruitsandveggiesmatter.gov/month/fresh_beans.html
www.ipmcenters.org/cropprofiles/docs/Cabeans-green.html

School Garden: Garden Sweep

Gardens often contain many insects and can sometimes be damaged or destroyed by hungry pests. There are also helpful insects, though, that will eat the harmful kind. Do a sweep of your school garden and see what types of insects are helping or harming it.

Supplies:

- One-quart or larger re-sealable plastic bags (one bag per group)
- Sweep nets
- Cotton gloves
- Magnifying glasses
- Insect identification chart or field guide

Activity:

- Divide students into teams of five
- Assign each team with a large area to sweep
- Spend 15 to 30 minutes capturing insects using nets and transferring to the re-sealable bag*
- Examine insects using the magnifying glass
- Use the chart or field guide to identify insects

*Only students wearing gloves should transfer insects to bags to prevent cases of insect bites or stings.

- Discuss student findings and observations as a class; sample topics may include:
  - Insects that inhibit or damage the garden
  - Insects that help the garden
  - Seasonal insects

Adapted from: **www.kidsgardening.com**

For more ideas, reference:
A Child's Garden of Standards, CDE, 2002.
www.lifelab.org

Cafeteria Connections

Conduct a contest to determine your school's favorite fruit and favorite vegetable. Make it simple by using poster boards to print out the names and pictures of various fruits and vegetables (one fruit or vegetable per board). Post the boards in the cafeteria and give every student two colored dots: red for fruits and green for vegetables. Students can then vote by placing the dot on their favorite fruit and vegetable. Older students can help with tallying the results. You can also involve the school staff by allowing them to vote for their favorites. Post all results in a common location to share with students and staff.

For more ideas, reference:
Fruits and Vegetables Galore, USDA, 2004.

Physical Activity Corner

To maximize classroom performance, students need to get regular physical activity — at least one hour every day. With summer winding down, encourage students to get outside and play. Active students who practice healthy eating habits are more likely to perform better in the classroom. Dedicate the month of August to playing a different game or activity, like *Playground Hula-ball,* each week.

Playground Hula-ball

Objective: Develops concentration, hand-eye coordination, upper body strength

Supplies:

- Hula hoops
- Two mini footballs

Activity:

- Stand hula hoops upright by placing a rack or large object on the bottom to anchor them
- Divide students into two teams
- One member from each team tries to throw the football through the hoop
- All team members get a chance to throw the ball
- Set a goal for the team (i.e., be the first team to get 10 throws through the hoop)

Go Farther: Roll the hula hoop on the ground and see if students can throw it into a moving hoop. Or lengthen the distance students must throw the ball.

Bring It Home: August is Family Fun Month. Encourage students to be active with their family members, such as practicing throwing a ball or going for walks after dinner.

For more ideas, visit:
www.sparkpe.org

Literature Links

- **Primary:** *Jack and the Bean Stalk* by Steven Kellogg, *Beyond the Beanstalk–Gardening Activities for Kids* by Nancy Allen Jarenka, *Explore the Magic World of California Beans,* California Dry Bean Advisory Board and *Beans,* Insect Lore.
- **Secondary:** *10 Terrific Vegetables and Everything You Need to Grow and Know Them,* National Gardening Association, *Spill the Beans and Pass the Peanuts: Legumes,* Lerner Publishing Group, *Good Bugs for Your Garden* by Allison Starcher and *Seeds of Change* by Carolyn Margolis and Herman Viola.

Green Bean Go-Getters

Have students brainstorm and gather their favorite nutritious green bean recipes. Ask students to write or visit their favorite restaurant to ask what kind of green bean dishes they have available; then offer to provide them with recipes featuring green beans to promote as a "school special." Offer to include special student-made artwork to help the restaurant show how they are supporting a local school.

Adventurous Activities

Problem Solving:

- Use both the pods and the beans in math equations, fractions and to demonstrate multiplication tables.
  For example:
  - If there are four pods and each pod contains three beans, how many beans are there total?

History Exploration:

- Trace the history of the green bean back to its origins in ancient Mesoamerica. Have students research the native populations that cultivated beans and how they used them (e.g., for food, medicine, religion). Assign groups of students with a region in North, Central or South America and have each group do a presentation.

Creative Writing:

- Use "green beans" in a poetry assignment or for a discussion on literary elements such as alliteration, rhyming, onomatopoeia, similes and metaphors.

For more ideas, visit:
www.nal.usda.gov/kids

Next Month: Tomatoes

CHAMPIONS for CHANGE
Network for a Healthy California

This material was funded by USDA's Food Stamp Program through the California Department of Public Health's *Network for a Healthy California*. These institutions are equal opportunity providers and employers. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483. © Copyright California Department of Public Health 2007.

December, 2004

Harvest of the Month

CALIFORNIA NUTRITION NETWORK ORANGE COUNTY COALITION

Eat at least five fruits and vegetables each day for better health!

Be physically active every day!

Inside:

Background	1
Jicama Facts	2
Recipe/Activity	2
Connections	3
Resources	4

Harvest of the Month

Harvest of the Month supports literacy while creating an educational link between your classroom and cafeteria.

The goals of this program are to promote reading and to increase enjoyment and consumption of fruits & vegetables. To motivate students to make healthful choices, they have an opportunity to taste and explore the featured fruit or vegetable during class and lunch.

- Each month participating teachers receive information about a fruit or vegetable.
- They can utilize the information in various standard-aligned activities in the classroom.
- The information presented can also be shared with parents.

Jicama

Homely, yes but jicama (HIH-kuh-ma) is also a sweet and crunchy tropical tuber. Enjoy raw in salads and other cold dishes or stir fried. When cooked, jicama retains its crisp texture and does not change colors.

Peel away the thin brown skin to get at the edible crisp white flesh. Choose jicamas that are firm and heavy, avoid any mold.

Store whole in the refrigerator 2-3 weeks; once cut, wrap in plastic wrap and chill for up to 1 week.

Jicama is sometimes called a Mexican potato or yam bean. It is available year round with the peak season from November – May.

It is a street food in its native habitat, sold with a squeeze of lime and a shake or two of chili powder.

Jicama Facts:

Jicama is similar in nutrition to the potato with good concentrations of vitamin C and potassium, low in sodium, and has fewer calories that the potato.

Jicama has been compared to a radish, potato, or water chestnut in texture and as having an apple-nutty flavor.

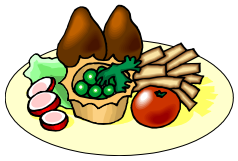
Nutrition Facts:

Serving size: ½ cup raw jicama

Calories: 48
Carbohydrate: 11 grams
Protein: 1 gram
Fat: 0 grams
Cholesterol: 0 grams
Potassium: 162 milligrams
Vitamin C: 36% RDA

Jicama Math:

- 1 whole jicama = about 2 cups cubed jicama
- If ½ cup cubed jicama equals 48 calories, how many calories in a whole jicama? (192 calories)
- If ½ cup jicama provides 36% of the daily Value for Vitamin C (60mg), what percentage does a whole jicama provide? (144%)
- How many milligrams does a ½ cup of jicama provide? (About 22 mg)
- If ½ cup of jicama weighs about 3 ounces, how much does a medium size whole jicama weigh on average? (12 oz or .75 or ¾ of a pound)
- Jicama is 85% water by weight. How many grams of water are in 100 grams (31/2 oz) of jicama? (85 grams or 3 oz)



Recipe/Activity

Jicama, Orange and Onion Salad

Ingredients:
2 c Torn lettuce leaves
2 Navel oranges, peeled and thinly sliced
4 Red onion, thinly sliced
1 c Jicama, peeled and julienne-sliced
1/3 c Orange juice (for Dressing)
1/2 t Light olive oil or vegetable oil (for Dressing)
1 T Fresh cilantro, finely chopped (for Dressing)
1/8-1/4 t Chili powder (for Dressing)

Preparation:
In a large salad bowl, place torn lettuce. Cut orange slices into quarters; toss into lettuce with onion and jicama. For dressing, shake together all ingredients in a shaker jar; toss with salad. Makes 4 servings.

Jicama Chili Sticks

Ingredients:
1-2 jicamas
1-2 limes
1-2 tsp chili powder

Preparation:
Peel jicama. Cut into rounds or strips. Place on a paper towel and sprinkle with lime juice. Add chili powder. Arrange on a platter and serve chilled.

Preparation Tips:

Jicama must be peeled before using.

Jicama may also be used as an ingredient in stir-frys and sauces to add a crunchy texture.

Serve julienned or sliced jicama on vegetable platters with dip for an appetizer.

Selection Tips:

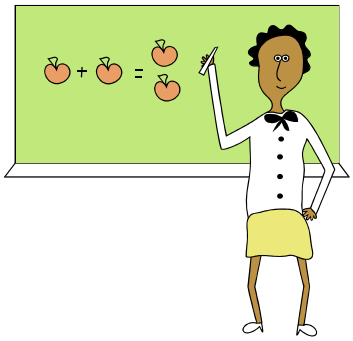
Choose jicama with firm texture and smooth, unblemished skin.

Avoid shriveled or moldy jicama.

Curriculum Connections

Grade/s	Learning Activity	Assessment Tool	Curriculum Links*
PreK-K	Arrange for a visit to a farmer's market to inform students about what a local farm does	Students complete a class picture with captions about a day in the life of a farmer. Studetns ewxpalin the content of the book with an adult helper.	LA-K Writ 1.1 List & Speak Std 1.2
Pre-K-K	Read "The Victory Garden Vegetable Alphabet Book", by Pallotta and Thomson. Discuss fruits and vegetables the studetns have already tried.	Have studetns color or paint the fruit or vegetable that intrigued them most in the book. Students draw pictures of favorites, dictate/write the food name and reasons for liking it.	LA-K Writ & Oral Std 1.2 Read Comp Std 1.1-1.6, 2.1, 2.3 Creative expression 2.6
1-3	Take students to visit a California Certifie Farmer's Market (CFM) to learn what farmers produce.	Students demonstrate how important a farrmer is by drawing pictures of produce they saw at the SFM and sorting the food pictures on a *Food Guide Pyramid* poster.	CS Gr.1 Std 1.0 LA Gr.1 List & Speak 1.0, 2.3
1-3	Read Vegetables in the Garden, by Bourgoing. Students can reasearch what nutrients are found in their favorite vegetable.	Have studetns write a paragraph or two on their favorite vegetable, explaining why it is their favorite. Have studetns do a water color or use tempera paint to draw a picture of their favorite vegetale.	LA Gr.1, 2, 3 Writ App Std 1.1, 1.2, 1.3 Creative Expression 2.2
4-6	Workingin groups of 5-7, studetns will collaborate on methods to decorate a jicama or create any form of jicma art. Students will work together to inventively create jicama art to be entered into a contest.	Students will work together to inventively create jicama art to be entered into a contest.	Gr. 4,5,6 Creative Expression 2.0
4-6	Students makes estimation regarding nutrtion and measurements for jicama using nutrition data on page 2. Perform mathmatic calculations to verify estimations. Compare physcial mesurements with estimations.	Students use the nutrient information and measurment data to determine ratios, rates, and percentages.	Math-Gr. 4 Numb Sense Std 3.2 Math-Gr. 5 Numb Sense Std 1.2 Math Gr. 6 Alg 2.0, 2.2

*LA = California English Language Arts Content Standards *Math = Mathematics Content Standards
*CS = Challenge Standards for Student Success/Health Education

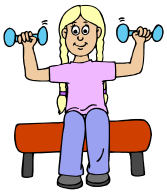


Additional Resources

Websites to visit:

5 A Day www.5aday.com

A to Z Teacher Stuff www.atozteacherstuff.com



Books:

The Victory Garden Vegetable Book, Pallota and Thomson
Vegetables in the Garden, Bourgoing
The People of Mexico and Their Food, Ann L. Burkhardt
Mexico (Food & Festivals), Linda Illsley
Multicultural Cookbook for Students, Carole Allyn & Lois S. Webb
This is the Way We Eat Our Lunch, Edith Baer/Steven Bjorkman

Physical Activity Corner

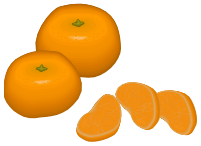
Holiday Movement Exchange

Teacher and children form a circle with each child standing in a circle with arms stretched out. (For younger children, the teacher should have masking tape or carpet squares as designated spaces for the children to stand on). Teacher plays music and calls out one child into the center of the circle to do a movement, such as jump. The class will stay in their places and jump until the music stops. Then the teacher calls for another child to do a new movement, like hop. Continue until each child has had a turn.

Newsletter adapted with permission from Santa Clarita Valley School District and ABC School District.

Next Month…

Tangerines



It's Cool to Eat @ My School!

The California Nutrition Network OC Coalition…

We are a coalition of Orange County School Districts working together to promote healthy eating and a physically active lifestyle among our students and their families. Current members include Anaheim City School District, Centralia School District, and Saddleback Valley Unified School District. Our goal is to provide teachers, parents, and children with the knowledge and skills needed to make healthy eating and physical activity a part of a life-long active life-style. For More information about the OC Coalition, contact Kari Tuggle, MS, RD at (714)327-1056

A message from the California Department of Health Services. Funding provided by USDA's Food Stamp Program, an equal opportunity provider and employer, helping limited income Californians buy more nutritious foods for a healthier diet. For more information about Food Stamps, contact (877) 597-4777.

Jicama

Jicama is a relative of the potato family. It is a popular dietary staple in Latin America and widely grown in Mexico and Central America. There are many names for Jicama including: the Mexican potato, Mexican yam bean, ahipa, saa got, Chinese turnip, lo bok, and the Chinese potato.

Jicama Nutrition

Jicama	
Serving size 60g, 1/2 cup raw, sliced	
Amounts Per Serving	**% Daily Value**
Calories 25	
Calories from Fat 0	
Total Fat 0g	0%
Sodium 0mg	0%
Cholesterol 0mg	0%
Total Carbohydrate 5g	2%
Dietary Fiber 3g	11%
Sugars1g	
Protein 0g	
Vitamin A	0%
Vitamin C	20%
Calcium	0%
Iron	2%
Percent Daily Values are based on a 2,000 calorie diet.	

Jicama looks similar to a turnip or a large radish, and it can be used as an alternative to the water chestnut. Its skin is thin and can be gray, tan, or brown in color. Additionally, it has a short root and contains white flesh. The skin is typically peeled before eating it raw. Raw jicama tastes similar to a pear or apple. It also does not discolor when exposed to the open air for awhile. Because of this, raw jicama is often used as an accompaniment to raw vegetable platters. When jicama is used in cooking it tends to take on the flavors of the ingredients that it is being combined with. Therefore, jicama is a nice complement to various stir-fry dishes because it blends well with many vegetables and seasonings. Jicama is a very versatile vegetable that contains a high amount of vitamin C, is low in sodium, and has no fat. One adult serving of jicama, which is equal to approximately 1 cup of cubed jicama or 120 grams, also contains only 45 calories. Jicama is available year-round. When purchasing jicama, select tubers that are firm and have dry roots. Make sure that the jicama has an unblemished skin and that is not bruised. Once purchased, store jicama for up to two weeks in a plastic bag in your refrigerator. Source: FruitsandVeggiesMatter.gov *Click here to learn more about meal planning, grocery shopping and recipe preparation.*

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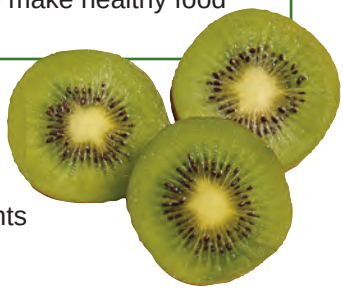
Jicama is available year-round. When purchasing jicama, select tubers that are firm and have dry roots. Make sure that the jicama has an unblemished skin and that is not bruised. Once

Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Supporting the health of students is essential for academic achievement. Eating nutrient-rich fruits and vegetables improves academic performance and increases cognitive functioning in undernourished children. *Harvest of the Month* connects with core curricula to give students the chance to explore, taste, and learn about the importance of eating fruits and vegetables. It links the classroom, cafeteria, home, and community to motivate and support students to make healthy food choices and be physically active every day.



Exploring California Kiwis: Taste Testing

What You Will Need:

- One whole and one peeled and sliced kiwi per two students
- Pencil and paper

Activity:

- Each student makes two columns on a sheet of paper, labeled whole and sliced. Create five rows and label: texture, look, smell, feel, sound, and taste.
- Feel the outside of the whole kiwi and record observations.
- Follow with the sliced kiwis and record observations.
- Compare and contrast the two columns.

For more ideas, reference:
School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39–42.

Nutrition Facts

Serving Size: ½ cup kiwifruit, sliced (90g)

Calories 55	Calories from Fat 1
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 3mg	0%
Total Carbohydrate 13g	4%
Dietary Fiber 3g	11%
Sugars 8g	
Protein 1g	

Vitamin A 2%	Calcium 3%
Vitamin C 139%	Iron 2%

KIWIFRUIT

Cooking in Class: Kiwi Spears

Makes 30 tastes at 1 small spear each

Ingredients:

- 10-12 kiwis, peeled and sliced
- 5 tangerines, peeled and segmented
- 5 bananas, peeled and sliced
- Sturdy plastic straws, cut in half, or stir sticks
- Paper plates or napkins

1. Thread two slices each of kiwi, tangerine, and banana, in an alternating pattern, onto straws.
2. Serve one spear on a plate to each student.

Nutrition information per serving:
Calories 53, Carbohydrate 13 g, Dietary Fiber 2 g, Protein 1 g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 0 mg, Sodium 2 mg

For more ideas, reference:
Kids Cook Farm-Fresh Food, CDE, 2002.

Reasons to Eat Kiwis

A ½ cup of sliced kiwis is:

- An excellent source of vitamin C* and vitamin K.
- A good source of fiber.
- A source of potassium, folate, beta-carotene, lutein, and zeaxanthin.
- One of the most nutrient-dense fruits.**

*Learn more about vitamin C on page 2.
**Refer to *Just the Facts* on page 2 for more information.

Champion Sources of Vitamin C*:

- Bell peppers
- Broccoli
- Citrus fruits
- Cantaloupe
- Cauliflower
- Kiwifruit
- Mustard greens
- Strawberries

*Champion sources provide a good or excellent source of vitamin C.

Source: www.nal.usda.gov/fnic/foodcomp/search (NDB No: 09148)

What is Vitamin C?

- Vitamin C helps the body heal cuts and wounds and helps lower the risk of infection.
- It also helps keep the body from bruising and helps build the tissue that holds muscles and bones together.
- Vitamin C is also known as ascorbic acid and helps the body absorb the iron found in foods.
- It is only found in plants.
- Vitamin C is a powerful antioxidant. These nutrients help protect cells from damage that can increase your risk for certain diseases, such as cancer.
- Vitamin C strengthens your immune system. However, research has not shown that high doses of vitamin C can prevent or cure the common cold.

For more information, visit:
www.eatright.org

How Do Kiwis Grow?

Kiwis grow on large, tender vines that can reach a height of 15 to 30 feet. The vine's shoots are thickly covered with reddish hairs and its large, heart-shaped leaves grow from six to nine inches long and up to eight inches wide. Due to the weakness of their vines, kiwis are commercially grown on sturdy support structures. From November to February, kiwi vines are dormant and must chill for about 600 to 850 hours at temperatures below 45 F. Vines are pruned during this time to help maintain production and regulate next season's crop yield and fruit size.

Budbreak in California generally occurs in mid to late March, depending on the growing location and weather conditions. By the time shoots have grown four to six inches long, all parts of the flower have been formed. The flower parts continue to expand until bloom, which usually starts in May.

Kiwi plants are dioecious, meaning individual plants are male or female. Only female plants bear fruit and only when pollenized by a male plant. They are typically planted in a vineyard at a ratio of about eight females to one male. Growers bring in bees during bloom so that the bees can move the pollen from the male to the female vines.

Following pollination, the fruit grows rapidly for the first 60 days and then slows until harvest. In California, where growing season temperatures are typically warm, 90 to 105 F, and summer rainfall is nonexistent, supplemental irrigation is necessary to achieve optimum kiwi growth and production. Peak water use on a hot summer day is about 10,000 gallons per acre.

Harvest begins in late September, with the majority of fruit harvested during October and early November.

Botanical Facts

Pronunciation: kē´wē-frōōt
Spanish name: kiwifruit or kiwi
Family: Actinidiaceae
Genus: *Actinidia*
Species: *A. deliciosa*

The kiwifruit is the edible fruit of the woody vine *Actinidia deliciosa* of the genus *Actinidia*. Although native to China, *A. deliciosa* spread to New Zealand in the early 20th century. Those who tasted the fruit thought it had a gooseberry flavor and began to call it the "Chinese Gooseberry." The fruit finally received its current name in 1959 when it was became a popular commercial product and an export company from New Zealand named it after the national bird, the kiwi.

In North America, it is commonly known as "kiwi," but it is marketed to the rest of the world as "kiwifruit." There are 400 varieties of kiwis, but Hayward is the most popular variety in the United States.

For more information, visit:
www.kiwifruit.org

Just the Facts

- Kiwis are one of the most nutrient-dense of all fruits.*
- Kiwis grow on vines that can be as high as 30 feet.
- Kiwis are actually a berry.
- The skin of a kiwi is edible. Try eating it whole like an apple!
- Kiwis contain an enzyme that acts as a natural meat tenderizer.

*The 1997 study examined the 27 most commonly eaten fruits and found kiwis to be the most nutrient-dense followed by papayas, mangos, and oranges.

For more information, visit:
www.calharvest.com/kinutr1.html

How Much Do I Need?

A ½ cup of sliced kiwis is about one medium kiwi. This is about the same as one cupped handful. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. Visit **www.mypyramid.gov** to have students determine how many cups each of fruits and vegetables they need to eat every day. Have students write down their goals and track their food choices for all food groups using the MyPyramid Worksheet*.

*Download worksheet from
http://teamnutrition.usda.gov/resources/mpk_worksheet.pdf

Recommended Daily Amount of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.

Cafeteria Connections

- Set aside a time each day to review the school menu with students and discuss why eating a variety of colorful fruits and vegetables is healthy for them. Ask students to identify the health benefits of specific fruits and vegetables on the menu.
- Have students keep records for a week of what meals are served in the cafeteria. Have them find out what fruits and vegetables are being served in the meals. Research where the fruits and vegetables are grown. Have students interview those responsible for buying food and determine how much, if any, is locally grown.

For more ideas, reference:
Fruits and Vegetables Galore, USDA, 2004.
www.nal.usda.gov/kids
www.agclassroom.org

School Garden: Giving Thanks

Have students write an essay or short story on the following:

- What does the garden give you for which you are thankful?
- What do you think it would be like if you had to grow all your own food?
- What do you notice that tells you winter is coming?

If interested in growing kiwis in your school garden program, visit:
www.fsa.usda.gov/ca
www.cfaitc.org
www.agclassroom.org

Student Sleuths

1. What is folate and what are the benefits of this B vitamin?
2. What is the difference between soluble and insoluble fiber? What are the benefits of each?
3. A study of the 27 most commonly eaten fruits found that the kiwi is the most nutrient-dense fruit. Why? What are the second and third ranked fruits?
4. Which enzyme makes the kiwi a natural meat tenderizer? What does it do?
5. Identify on a world map the countries where kiwis are grown.
6. Kiwis are available year-round in the United States. How does the growing and harvesting time compare to other kiwi-producing countries, like Chile and New Zealand? Is it different? Why or why not?
7. Research how the care of the kiwi vine and the importance of pruning are similar and different to that of other vine and tree fruits.

For more information, visit:
www.kiwifruit.org
www.thefresh1.com/kiwifruit.asp
www.fruitsandveggiesmatter.gov

Home Grown Facts

- California is the only state that commercially produces kiwis for the United States marketplace.
- California kiwis represent 95 percent of all kiwis grown in the United States.
- Approximately 8,000 acres are devoted to the production of kiwis in the United States.
- Kiwis were not widely available in California grocery stores until 1970.

For more information, visit:
www.kiwifruit.org

A Slice of Kiwi History

The history of the kiwi began in the Yangtse River valley in China, where it was called “Yang Tao.” The fruit Yang Tao was considered a delicacy by the court of the great Khans who cherished its delicious flavor and emerald-green color.

The first seeds were brought out of China by missionaries to New Zealand at the turn of the 20th century. They soon became a popular backyard vine. Kiwi plants were first exported to the United States in 1904, but it wasn’t until the 1960s when kiwis gained popularity in domestic markets.

- **1960:** Carl Heinke, the first commercial grower of California kiwi, planted nine Chinese Gooseberry vines in Paradise, at the request of his friend, Bob Smith. (Smith was employed by the U.S. Plant Introduction Gardens and was conducting research on Chinese Gooseberries in California to determine potential for their commercial production.)
- **1961:** The first New Zealand kiwi was sold at Trader Vic’s in San Francisco.
- **1962:** The first consumer request for kiwis occurred when a customer asked a local store for Chinese Gooseberries. Having never heard of them, the produce manager contacted produce dealer Frieda Caplan, who then began importing kiwis from New Zealand.
- **1966:** Smith gave kiwi seeds to George Tanimoto, a grower in Gridley who planted the seeds in a nursery.
- **1968:** Tanimoto transferred the vines to an acre of land.
- **1970:** Tanimoto’s vines yielded 1,200 pounds of kiwis. California kiwis found their way into the U.S. market when Caplan’s company, Frieda’s Fresh Produce, purchased Tanimoto’s entire harvest.
- **1977:** With the rise in popularity of the then-exotic kiwi, the Kiwifruit Growers of California was established.
- **1980:** The California Kiwifruit Commission was formed when both California and New Zealand kiwis became popular with French nouvelle/California cuisine.

Physical Activity Corner

As the winter holidays approach, students need extra support to stay healthy and focused in the classroom. Children should engage in at least one hour of physical activity every day to stay fit both mentally and physically. Play a different game or activity, like *Supermarket Face-Off,* each week in or out of the classroom.

Supermarket Face-Off

Objective:

Develops motor, listening, and team skills

Supplies:

- Play area (30 x 30 paces), divided in half
- Two "home" bases
- Four cones for boundaries (optional)

Preparation:

- Separate class into two teams: *Fruits* and *Veggies*.
- *Fruits* and *Veggies* face each other on opposite sides.

Activity:

- Call out the name of a fruit; *Fruits* run back to their base and avoid being tagged by *Veggies*.
- Call out the name of a vegetable; *Veggies* run back to their base and avoid being tagged by *Fruits*.
- If tagged, change to the team that tagged you.
- At end of game, see which items you have more of in your "shopping cart": *Fruits* or *Veggies*.
- *Variations:* Instead of calling out a fruit or vegetable, encourage careful listening by calling out "orrrrr-nament" (instead of "orange") or "bbbb-basket" (instead of "banana").

Go Farther:

Have students use different types of motor skills to get to their base (e.g., walk, run, skip, hop).

Bring It Home:

Encourage students to go to the grocery store with their family members to select fruits and vegetables to bring home to eat.

For more ideas, reference:

Community Youth Organization Idea & Resource Kit, Network for a Healthy California—Children's Power Play! Campaign,
www.cdph.ca.gov/programs/cpns/Pages/PowerPlayResources.aspx

Adventurous Activities

Field Trip:

Take students to a farmers' market. To find the location of a farmers' market in your area, visit **www.localharvest.org/farmers-markets**. Or, bring the field trip to the school. For more information on Farm to School programs, visit **www.farmtoschool.org/ca/**.

Science Investigation:

Cut a kiwi in half and have students compare how the inside looks like the iris of an eye.

History Exploration:

Have students research the various uses of kiwis throughout history and do a classroom presentation.

Creative Writing:

Using the facts learned from the Student Sleuths, have students interview their parents and friends to share their "Kiwi IQ."

Marketing Lesson:

Many fruits are sold by their variety, but kiwis are usually sold by the general name "kiwifruit" or "kiwi." Discuss with your class the reasons for the differences in the way kiwis are marketed in comparison to other produce.

For more ideas and information, visit:
www.ars.usda.gov/is/kids

Literature Links

National Children's Book Week

Invite school librarian to help you with this activity.

- Have students make drawings and write short stories featuring kiwis. Make copies of the stories, bind them into a book and give to the child nutrition and other school staff.
- "Swap" story books with another school participating in Harvest of the Month and share the new kiwi stories with your class or send to a local grocery store to display in the produce section.

For more ideas, reference:

School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39-42.

For a list of book ideas, visit:
www.harvestofthemonth.com

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net.
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Kumquat Growers Inc

Nagami

The Nagami or Oval Kumquat (*Fortunella margarita*) is the most common variety in the United States. It was introduced into Florida from Japan in 1885 and has been grown commercially in the "Kumquat Capitol," Saint Joseph, Florida since 1895.

The Nagami Kumquat is oval in shape, 3/4" to 1" in diameter and between 1" to 2" long. The tartness of the fruit makes them great for use in cooking and/or for marmalades and jellies.

The tree is shrub like and is similar to an orange tree in appearance. It is a prolific bearer and very decorative because of the dark green leaves and brilliant orange fruit. The fruit lasts for several months on the tree in warm winter climates.

The trees do very well when planted in the yard or in larger pots. They can withstand temperatures as low as 28 degrees and require about the same care as other citrus. They can be grown throughout Florida, but produce larger and juicier fruit when grown in the sandy soils on the hills of eastern Pasco County in central Florida. The kumquat tree is highly resistant and possibly immune to citrus canker.

What is a Kumquat (cumquat)?

The word KUMQUAT is Chinese for "Gold Orange" because of the color of the fruit.

How do you eat a Kumquat?

Click here to view the video

Kumquats have been called "the little gold gems of the citrus family". They are believed to be native to China and were included in the genus *Citrus* until about 1915 when Dr. Walter T. Swingle set them apart in the genus *Fortunella*. *(in honor of the British horticulturist, Robert Fortune who introduced the kumquat to Europe in 1846)*. "Cumquat" is the common British spelling of the name for the fruit.

There are four varieties (species) of kumquats. They are the Hong Kong Wild (*Fortunella hindsii*), Marumi (*Fortunella japonica*), Meiwa (*Fortunella crassifolia*), and Nagami (*Fortunella margarita*). The two most common species of kumquats grown in the United States are the **'Nagami'** and the **'Meiwa'**.

Kumquats have a very distinctive taste. It is the only citrus fruit that can be eaten "skin and all." The peel is the sweetest part and can be eaten separately. The pulp contains the seeds and juice, which is sour. When eaten together, you get a sweet and sour taste which is unlike anything else. The seeds, however, should not be eaten. They are similar to the seed of the orange and have a distinctive green color. The seeds also contain pectin, which can be removed by boiling for use in making jams and jellies.

Meiwa

The Meiwa or Large Round Kumquat (*Fortunella crassifolia*) is grown extensively in China. In Japan, it is also called the ninpo or neiha kinkan. It was introduced into the United States from Japan in 1910, but is still somewhat rare here.

Meiwa kumquats are more round in shape and are often referred to as "sweet kumquats". They have few seeds and are best eaten whole. While they are very good to eat, it is not recommended that you use them for cooking or for marmalade as they lack the tartness of the Nagami kumquats.

The Meiwa kumquats are not normally available commercially. However, we have had some requests for them in the last few years. Call or E-Mail for availability and pricing.

Nutritional Information

Copyright 2003. All Rights Reserved. Kumquat Growers, Inc. 31647 Gude Rd. Dade City, Florida 33525
www.kumquatgrowers.com email: info@kumquatgrowers.com
Page updated: 08/21/2010

Lettuce

From Wikipedia, the free encyclopedia

Lettuce is a vegetable that is very healthy to eat. Both the stems and the leaves can be eaten.

Contents

- 1 Growing lettuce
- 2 Eating lettuce
- 3 Kinds of lettuce
- 4 History of lettuce
- 5 References

Lettuce

Iceberg lettuce field in Northern Santa Barbara County

Scientific classification

Kingdom:	Plantae
Division:	Magnoliophyta
Class:	Magnoliopsida
Order:	Asterales
Family:	Asteraceae
Genus:	*Lactuca*
Species:	***L. sativa***

Binomial name

Lactuca sativa
L.

Growing lettuce

Lettuce can be grown in many parts of the world, including Europe, Asia, and North America, in temperate climates. It will turn more bitter tasting in hot weather. You can grow lettuce during winter in a greenhouse.[1]

Eating lettuce

In some countries, it is often eaten cold and raw, in salads, hamburgers, tacos, and many other dishes. In some places, including China, lettuce is eaten cooked. Lettuce contains very little energy or nutrients.

Kinds of lettuce

Most lettuce leaves are green, but some are red. Most lettuce leaves taste bitter. Some kinds of lettuce grow in a head shape like cabbage, while the leaves of some kinds grow more loosely.

The five main cultivars are: green leaf, red leaf, cos, crisphead, and stem lettuce.[2]

Common varieties are Romaine, iceberg, and butter lettuce.

The name of the plant in English, *lettuce,* and in Latin, *lactuca,* come from *lactis*, the Latin word for milk, because the juice of the plant looks like milk.

Loose leaf Romaine lettuce

History of lettuce

Wild lettuce plants were eaten by the Romans and Egyptians. The ancient Greeks were among the first people to grow lettuce as a crop. It was one of the first plants brought to the New World by Christopher Columbus.[3]

References

1. ↑ http://www.selfsufficientish.com/lettuce.htm
2. ↑ http://www.urbanext.uiuc.edu/veggies/lettuce1.html
3. ↑ http://calettuceresearchboard.org/Origin.html

This short article about biology can be made longer. You can help Wikipedia by adding to it (//simple.wikipedia.org/w/index.php?title=Lettuce&action=edit) .

Retrieved from "http://simple.wikipedia.org/w/index.php?title=Lettuce&oldid=3088261"

Categories: Leafy vegetables | Asterales

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the taste takes you there!

Mango Nutrition

In addition to sumptuous tropical flavor, mangos deliver a host of nutrients and make healthy eating a delightful sensory experience. The Dietary Guidelines for Americans recommend that healthy adults consume 5 to 13 servings of fruits and vegetables every day (based on a daily consumption of 1,200 to 3,200 total calories). Why not make one of those a mango? The versatile mango is available year round and adds delicious flavor to a balanced diet.

Did You Know?

- Mangos are an excellent source of vitamins C and A, both important antioxidant nutrients. Vitamin C promotes healthy immune function and collagen formation. Vitamin A is important for vision and bone growth.
- Mangos are a good source of dietary fiber. Diets low in fat and high in fiber-containing grain products, fruits, and vegetables may be associated with a reduced risk of some types of cancer.
- Mangos contain over 20 different vitamins and minerals.
- Mangos scored 93 out of 100 on the recently introduced NuVal scoring system for overall nutritional quality. Click here for more information about the NuVal system.

Nutrition Facts

Nutrition Facts

Serving Size 1 cup, sliced (165g)
Servings Per Container

Amount Per Serving	
Calories 100	Calories from Fat 5
	% Daily Value*
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 25g	8%
Dietary Fiber 3g	12%
Sugars 22g	
Protein 1g	

Vitamin A 35% • Vitamin C 100%
Calcium 2% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

References

Perkins-Veazie, P.; Collins, J. Literature Search on the Nutritional Benefits of Mangos.

NuVal LLC, Nutritional Scoring System: www.nuval.com

We all know we should be eating more fruits and vegetables every day. Check out http://www.fruitsandveggiesmorematters.org/ for great tips and recipes to help your family eat more fruits and veggies. Because even a little bit more of the good stuff makes a difference!

fruits & veggies more matters™
eat more info

Oklahoma Ag in the Classroom

Mushrooms

mushroom production / button mushrooms / portobello mushrooms / shiitake mushrooms / wild mushrooms

- The first mushrooms were thought to have been cultivated in Southeast Asia.
- In ancient times it was believed mushrooms were created by thunderbolts because wild mushrooms appear after storms.
- Mushrooms are spread in nature by spores, much the way seeds spread plants. They broadcast spores that colonize and grow where the conditions are right. A mature mushroom will drop as many as 16 billion spores.
- Because mushrooms contain no chlorophyll, they can't photosynthesize their own food, so they rely on other plants for their nutritive energy. Parasitic mushrooms colonize living plants; saprophytic mushrooms live off decaying organic matter.
- Mushrooms are a kind of fungi, a major group of living things, originally considered plants but now treated as the separate kingdom Fungi. They occur in all environments on the planet and include important decomposers and parasites.
- Since the body of a mushroom is usually dispersed over a large area, it is rarely noticed. In nature some species of mushrooms may have a body that spreads over hundreds of square miles.

- A population of honey mushrooms (Armillaria ostoyae) in the Blue Mountains of eastern Oregon was found to be the largest single organism in the world, spanning 2200 acres.

- Fungi have a vegetative body called a thallus or soma, composed of one-cell-thick filaments called hyphae. The hyphae typically form a microscopic network within the substrate (food source) called the mycelium, through which food is absorbed. Usually the most conspicuous part of any fungus are its fruiting bodies—reproductive structures that produce spores. The mushrooms we like to eat are the fruiting bodies of certain fungi.

- Many species of mushrooms and fungi have been used as folk medicines for thousands of years. These are now under intense study by ethnobotanists and medical researchers for their potential anti-cancer, anti-viral, and/or immunity-enhancement properties.

Mushroom Production

- A mushroom is not a true vegetable, since it has no leaves, roots or seeds and does not need light to grow. However, the National Agricultural Statistics Service includes mushrooms in the vegetable category for statistics purposes.

- Americans eat four pounds of mushrooms per capita a year. The Chinese eat about 22 pounds.

- Consumption of mushrooms in the US has quadrupled since 1965.

- Mushroom farms are climate controlled buildings; airflow, temperature and light are all constantly monitored.

- The US is the 2nd largest producer of mushrooms, following China.

- Pennsylvania, California and Florida are the top mushroom-

producing states.

- Mushrooms are canned, pickled and frozen, but drying mushrooms is the oldest and most commonly used way to preserve them.

Button Mushrooms

- Virgil Jurgensmeyer, Joe Jurgensmeyer and Darrell McLain founded J-M Farms, Inc., in Miami, OK, in the fall of 1979. The first button mushrooms were picked on March 13, 1980 and the first delivery was made the following day to Associated Wholesale Grocers of Springfield, MO. J-M Farms, Inc., delivers mushrooms to Oklahoma, Texas, Arkansas, Mississippi, New Mexico, Kansas, Missouri and Iowa.

- The button mushroom is is one of the most widely cultivated mushrooms in the world. Most grocery stores in the western world sell this mushroom canned and fresh.

- The French started cultivating the button mushroom (agaricus bisporus) in the 17th Century.

- Today's commercial variety of the button mushroom was originally a light brown color. In 1926, a Pennsylvanian mushroom farmer found a clump of button mushrooms with white caps in his mushroom bed. Cultures were grown from the mutant individuals, and most of the cream-colored store mushrooms we see today are products of this haphazard natural mutation.

- The Portobello mushroom is a large brown strain of the same fungus as the button mushroom, left to mature and take on a broader, more open shape before picking. Portobello mushrooms are distinguished by their large size, thick cap and stem, and a distinctive musky smell.

- Portabella mushrooms serve as a substitute for meat in some

recipes because they have a similar texture.

Shiitake Mushrooms

- The shiitake mushroom is large and brownish to very dark brown and has a fleshy cap from about 1 to 2 inches across. Shiitake is easily dried. Dried shiitake is convenient to use and inexpensive to store and transport.

- The shiitake (she-TAH-kee) mushroom is native to Japan and China and grows naturally on fallen oak logs in the spring and autumn. Shiitake is from the Japanese "shii" for oak and "take" for mushroom. In China it is also called the hsaing ku, meaning fragrant mushroom.

- Shiitakes are the second most-consumed mushrooms in the world, after the button mushroom. In Asia it is number one. Shiitake mushrooms are Japan's number one agricultural export.

- Shiitake can be grown either on hardwood logs like oak or on a special combination of oak sawdust, bran, millet and other additives.

- Logs used for shiitake production usually average 4-6 inches in diameter and 40 inches in length. Spawn, or mycelium, is placed in pre-drilled holes. Mycelium is the mass of threads which forms the vegetative feeding part of the shiitake. Wax is melted and dripped over the hole to form a seal.

- Lost Creek Mushroom Farms in Perkins, Oklahoma, sells grow-your-own shiitake mushroom logs, fresh and dried shiitake mushrooms and other shiitake mushroom products.

- As an alternative enterprise in the US, shiitake mushrooms represent a way to use low quality hardwoods such as the white oak, post oak and sweet gum covering millions of acres in east and central Oklahoma.

Wild Mushrooms

- Many mushrooms are extremely poisonous. While not every mushroom is dangerously poisonous, most simply aren't large or tasty enough to be eaten. WILD MUSHROOMS SHOULD NOT BE EATEN UNLESS IDENTIFIED BY AN EXPERT, AND EVEN THE EXPERTS MAKE MISTAKES SOMETIMES because many safe mushrooms closely resemble poisonous ones.

- A simple identification error can lead to symptoms of sweating, cramps, diarrhea, confusion, convulsions and potentially result in liver damage with a mortality rate of 60 percent or higher.

- There are over 38,000 varieties of mushrooms available, over 3,000 in North America alone, with varying colors, textures and flavors. There are so many varieties of mushrooms, both edible and toxic, that mass consumption is pretty much limited to those commercially-grown varieties which can be trusted to be edible.

Back to Ag Facts

Oklahoma Ag in the Classroom

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.

Nectarine: Nutrition . Selection . Storage

Nutrition information for nectarines and tips on how to select, store and prepare them. Health Benefits

[All Fruits] [All Vegetables]

Did You Know...

The nectarine is actually a subspecies of peach that lacks the gene for fuzz.

SELECTION STORAGE PREP

How to Select
Choose firm nectarines with smooth skin.

How to Store
Store unripe nectarines in paper bag until ripe, then store at room temperature for use within 2-3 days.

Nutrition Benefits
Low fat; saturated fat free; sodium free; cholesterol free; good source of vitamin C.

Fruit Nutrition Database
Vegetable Nutrition Database

You may also be interested in...
How to Read a Food Label

Key Nutrients Found in Fruits & Veggies
Dietary Guidelines for Americans
Fruit & Vegetable Recipe Search

Sign Up! Free Newsletter

Our Partners
California Tree Fruit Agreement

Nutrition Facts

Serving Size 1 medium (140g)

Amount Per Serving	
Calories 60	Calories from Fat 5
	% Daily Value*
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	0%
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 15g	5%
Dietary Fiber 2g	8%
Sugars 11g	
Protein 1g	

Vitamin A 8%	Vitamin C 15%
Calcium 0%	Iron 2%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 Carbohydrate 4 Protein 4

Health Benefits of Fruits & Vegetables

The natural antioxidants in fruits and vegetables will help keep your body working at its best, so consuming a diet that meets your daily recommended amount of fruits and vegetables is one of the best ways to give your body a strong defense against disease. Fruits and vegetables are protective to health as they're helpful at **reducing the risk of coronary heart disease, stroke and some cancers. They're also low in calories, which helps prevent obesity … a significant risk factor for type 2 diabetes, cancer and cardiovascular disease.**

Top 10 Reasons to Eat More Fruits and Vegetables

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1-sp 22

Clementines

A lot of people understand that fresh oranges are best in the winter, but not many people understand that different varieties have particular seasons. You'll have better luck coming home with good oranges if you learn which varieties are in season when - and keep a simple guideline in mind when you're selecting them at the market. Oranges and *all* citrus fruit should be *heavy in the hand for its size*. This is a simple test and it's your most reliable guide for citrus fruit.

The two most familiar varieties are navel and Valencia oranges, which are very good but if you limit yourself to them, you're missing out on some real treats.

Clementine's are the tiniest of the mandarins. Imported from Spain, Morocco, and other parts of North Africa, clementines are a cross between a sweet orange and a Chinese mandarin. They are small, very sweet, and usually seedless. Most people think of clementines as small tangerines, but they're a different variety entirely, with a distinctive taste. The Clementine is an excellent eating orange. Its small size and lack of seeds make it particularly popular with kids. Clementines have been available in Europe for many years, but the market for them in the United States was made only a few years ago, when a devastating freeze in Florida made domestic oranges scarce and expensive. A lot of oranges, including clementines, were imported from Europe, and clementines started to catch on. Over the past few years they've become increasingly popular, and as the demand has gone up, so has the price.

The mandarin orange originated in the Far East and has been around since 2000 B.C. If you've never seen a fresh mandarin, you're in for a surprise - the rind is a brilliant emerald green, and the flesh a beautiful deep orange. In the United States mandarins are grown in Florida and California, but they're not often available fresh because canners buy them up. The flavor of a fresh mandarin is much better than that of the canned, however, the flesh is semisweet, with no netting and no seeds. A lot of people pass them by at our store because they think they're just green oranges - that is, until I cut into some and let them have a taste. Then they come back for more. When mandarins are available, you'll find them in produce markets in the late fall. They can be available for two or three months, but later in the season there is heavy competition from the canners. Don't pass up fresh mandarins if you see them.

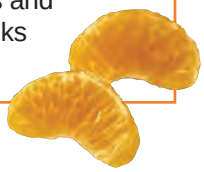
Whatever the variety, look for oranges that are shiny and heavy in the hand. It's a primary rule for a number of fruits, but it's especially important for oranges. Check

Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-in-Hand

The school environment plays an important role in feeding a child's body and mind and promoting lifelong healthy habits. Studies show that students who sample new foods in class first are more likely to try them in school meals. Use **Harvest of the Month** to introduce students to fruits and vegetables and promote daily physical activity. It connects with core curricula and links the classroom, cafeteria, home and community.



Exploring California Mandarins

Offering activities that allow students to experience mandarins using their senses may help increase interest, awareness and support for eating more fruits and vegetables.

Tools:

- One Satsuma, tangerine and tangelo variety* per group; harvest from school garden
- Paper and pencils
- One cutting board and knife per group

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

Sensory Exploration Activity:

- Divide class into groups of four
- Observe, feel and smell each variety
- Cut fruits into quarters; observe differences in skin
- Observe and record different tastes, colors, textures and shapes
- Discuss similarities and differences between varieties
- Report observations to class and note preference

Citrus fruits are sources of flavonoids (or bioflavonoids), known for their antioxidant properties and ability to increase levels of Vitamin C within the body's cells, positively affect blood flow and exhibit anti-allergy and anti-inflammatory effects.

For more information, visit: www.nal.usda.gov/fnic/foodcomp/Data/Flav/Flav02-1.pdf

For more ideas, reference:

Fruits and Vegetables Galore, USDA, 2004.

Nutrition Facts

Serving Size: 1 medium mandarin (88g)

Calories 47 — Calories from Fat 2

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 12g	4%
Dietary Fiber 2g	6%
Sugars 9g	
Protein 1g	

Vitamin A 12% Vitamin C 39% Calcium 3% Iron 1%

Source: **www.nutritiondata.com**

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

Cooking in Class: Tangerine Popsicles*

Ingredients:

Makes 70 mini-popsicles

- 35 large tangerines (50 medium)
- Ice trays
- Plastic wraps
- 70 toothpicks
- Hand juicers (optional)

Cut tangerines in half and juice into bowl using hand juicer or squeezing. (Scoop out any seeds from juice.) Pour juice into ice trays. Cover trays with plastic wrap. Insert toothpicks into middle of each cube. Let juice freeze. Serve mini-popsicles.

*For botanical investigation activities, visit the *Educators' Corner* at **www.harvestofthemonth.com**.

Adapted from: *Kids Cook Farm-Fresh Food,* CDE, 2002, pp. 74-75.

Reasons to Eat Mandarins

One medium mandarin provides:

- An excellent source of Vitamin C, which is an antioxidant. Antioxidants help prevent chemical damage to cells and can promote vision health, keep the immune system healthy, support cardiovascular health and help prevent cancer.
- A good source of Vitamin A, supporting healthy vision.
- A source of folic acid, a B-complex vitamin that can help prevent birth defects.

January Events

- National Fiber Focus Month
- Healthy Weight Week
- National Fresh Squeezed Orange Juice Week

CITRUS GALORE: MANDARINS

January

What's in a Name?

Pronunciation: măn'də-rĭn
Spanish name: mandarina
Family: Rutaceae
Genus: *Citrus*
Species: *Citrus reticulata*

The genus *Citrus* consists of three primordial species, one of which is the mandarin orange *(Citrus reticulata).** Mandarin oranges are not oranges *(Citrus sinensis),* and to avoid confusion are often referred to as simply "mandarins." The name "tangerine" is used to refer to mandarins of a deep, orange-red color and is derived from a mandarin cultivar that originated in Tangier, Morocco. While the two names are used interchangeably for commercial purposes, this is botanically incorrect.

There are different taxonomy systems in use to categorize the fruits within the *Citrus reticulata* species. The USDA adheres to the system which categorizes mandarins into three major cultivars (see chart).

Mandarin Cultivars	Marketed as	Popular California Grown Varieties of Cultivar
Common Mandarin	Mandarins and tangerines	Clementine, Honey, Sunburst, Dancy, Pixie
Satsumas	Satsuma or "Emerald Tangerine"	Kara, Owari, Silverhill (70 California varieties and 200 worldwide)
Mandarin Hybrids	Tangelos (tangerine-pomelo) and tangors (tangerine-orange)	Minneola tangelo, Sampson tangelo, Thornton tangelo, King tangor

*Implement *Science Investigation* activity on page 4 to help students learn about the three *Citrus* species.

For more information, visit:

http://citrusvariety.ucr.edu/citrus/mandarins.html
www.ers.usda.gov

Student Sleuths

1. Write a story describing the journey of a ripe citrus fruit from the farm to the consumer and how its nutrients are used in the human body.
2. What nutrients do citrus fruits provide and what are the levels recommended to help keep you healthy? Determine if you are getting these levels and, if not, make a plan to eat at least one citrus fruit each day.
3. According to the USDA, there are three main citrus species and many hybrid cultivars. What are the three main species? What are the hybrid cultivars and what species were crossed to create these hybrids? (See *Adventurous Activities* on page 4 for follow-up activity.)
4. How are seedless citrus fruit trees developed?

For information, visit:

www.cfaitc.org
http://ucce.ucdavis.edu

How Much Do I Need?

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.

School Garden: Plant a Fruit Tree

Go beyond growing an orange tree from seed (*School Garden* activity from Cycle I). Plant a citrus or other fruit tree.* Consult a local nursery for help with selecting an appropriate fruit tree for your area.

Materials:

- Dwarf rootstock (e.g., citrus, apple, peach, pear, plum)
- 4' x 4' area in garden
- Compost or other soil amendment
- Mulch (e.g., straw, wood chips, compost)

*For instructions on how to plant a tree, visit the *Educators' Corner* at **www.harvestofthemonth.com**.

Adapted from: **www.lifelab.org**

For more ideas, visit:

www.garden.org
www.ecomagic.org/fruition

Why start a school garden? Experiments conducted in California schools have shown that students are more likely to choose fruits and vegetables offered in school meals when they have planted, grown and harvested them from an instructional garden.

Just the Facts

- There is no waste in the processing of citrus fruits. The juice is used for fresh juice and refined into wines, liquors, vinegars and syrups; the peel is used to make oils, marmalade, pectin and citric acid; and seeds are used to make oils.
- In 2005, about 68 percent of the nation's total citrus crop was processed (mainly for juice), but more than half of California's citrus crop was sold as fresh. California's dry climate allows for growth of fruits that are more aesthetically appealing.
- Satsumas were once the most popular mandarin variety but are second now to Clementines.
- California Clementines are available from mid-November to January leading to their nickname as "Christmas Oranges."

Sources:
http://ucce.ucdavis.edu
www.fas.usda.gov

A Slice of Mandarin History*

- **2,200 B.C.E.:** First known references to citrus fruits; the mandarin is native to southeastern Asia and the Philippines.
- **1840:** Willow-leaf and China mandarin varieties are imported by Italian consulate from Italy and planted in New Orleans; varieties later travel to Florida and then California by end of 19th century.
- **1882:** King mandarin variety is sent from Southeast Asia to University of California Citrus Research Center at Riverside (UC Riverside).
- **1914:** Clementines are introduced to California farmers after five years of study at UC Riverside.
- **1997:** Harsh winter in Florida devastates domestic orange production; opens booming market to California Clementines.

*Visit the *Educators' Corner* at **www.harvestofthemonth.com** for a more detailed timeline.

For more information, visit:

www.hort.purdue.edu/newcrop/morton/mandarin_orange.html

Home Grown Facts

- California leads production of fresh citrus and ranks second nationally (behind Florida) in total citrus production.
- California is the nation's second leading grower of mandarins and leads domestic production of Clementines.
- Of the 250,000 acres of citrus grown in California, about 10,500 acres are harvested for mandarins at total value of about $38.2 million.
- Leading counties of mandarin production are Tulare, Riverside, San Diego, Imperial and Ventura.
- Satsumas, Clementines and Minneola tangelos are the State's top three mandarin varieties.

2005 Data

For more information, visit:

www.cdfa.ca.gov
www.nass.usda.gov

Eat Your Colors

Fruits and vegetables come in a rainbow of colors. Eat a variety of colorful fruits and vegetables every day — red, yellow/orange, white, green and blue/purple. These may lower the risk of some cancers. Mandarins are in the yellow/orange color group.

Color Group	Health Benefits	Examples of Citrus Fruits
Yellow/ Orange	Help maintain heart health, vision health and healthy immune system	Mandarins*, pomelos, citrons, oranges, grapefruits, lemons, loquats, kumquats

*See *What's in a Name?* on page 2 for list of mandarin cultivars and common varieties.

For more information, visit:

www.fruitsandveggiesmatter.gov

How Does Citrus Grow?

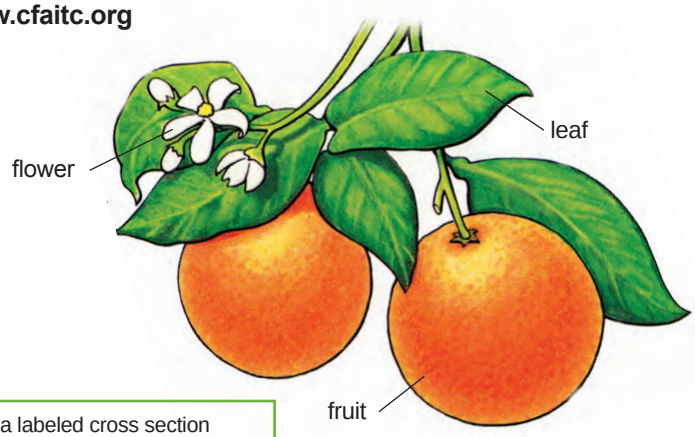
Citrus plants are large shrubs or small trees distinguished for their shiny, evergreen leaves and fragrant blossoms. The flowers produce a fruit known as a *hesperidium,* a berry with a leathery rind surrounding pulp-filled segments. Most citrus trees blossom two to five years after planting. Citrus fruits can be left on the tree without becoming overripe and do not continue to ripen after being picked.

	Citrus Trees	California Mandarins
Climate	Tropical and subtropical; most cannot tolerate freezing	Thrive in subtropical areas; most tolerant citrus tree; can withstand frost and drought*
Soil	Any type with good drainage or high air humidity	Tolerates low or high pH levels and salinity
Planting	Rows 10 to 20 feet apart; grow 16 to 50 feet tall	Rows about 10 feet apart; grow up to 25 feet
Propagation	Grafting or budding by rootstock	Same
Flowers	Light-colored, sweet scented blossoms; single flower contains both sexes	Same
Reproduction	Most are self-fertile; bees transfer pollen from male to female parts within flower	Self-fertile (common mandarin and hybrids) or parthenocarpic** (Satsuma)
Time from blossom to fruit	5 to 18 months	About 18 months
Harvest period	Year-round depending on locale (Northern or Southern Hemisphere)	October through May; Satsumas (early fall), common mandarins (winter), tangelos (late winter to spring)
Harvesting	Hand harvested (both processed and fresh)	Must be clipped, not pulled from tree

*Trees can withstand freezing, but fruits are easily damaged by cold.
**Parthenocarpic flowers do not require pollination.

For more information, visit:

http://aggie-horticulture.tamu.edu/citrus/mandarins.htm
www.cfaitc.org



For a labeled cross section of an orange, refer to Cycle I or download from **www.harvestofthemonth.com**.

Adapted from: *Tall and Tasty Fruit Trees,* Meredith Sayles Hughes, 2000.

Cafeteria Connections

Grades K–5:

- Get into the classroom by reading to students.
- Select a book from *Literature Links* on this page.
- Promote with teacher a follow-up student activity that complements book and supports literacy and/or nutrition skills, such as:
  - Ask students to draw themselves eating their favorite citrus fruit and list adjectives to describe fruit.
  - Display students' artwork on bulletin board in cafeteria.

Grades 6–12:

- Ask students to research and develop nutrition labels for several types of citrus fruits.
- Ask students to develop marketing messages that promote consumption of citrus on the school menu.
- Display students' creations in cafeteria.
- See *Literature Links* on this page for books to support students' research.

Adventurous Activities

Science Investigation:

As students will learn from the *Student Sleuths,* the USDA recognizes three species of the genus *Citrus:* the mandarin (*C. reticulata*), the citron (*C. medica*) and the pomelo (*C. maxima*). Within these species are dozens of sub-species, or cultivars, as well as natural and man-made hybrids. Common hybrids include the orange, grapefruit, lemon, lime and tangelo. Discuss the taxonomy system and how fruits and vegetables are botanically classified. Then have students complete the following activity:

- Work in groups of three to six students
- Develop a "new" citrus hybrid or other fruit
- Describe fruit characteristics (e.g., reproduction, growth, color, seeds, texture)
- Classify fruit according to characteristics (from Kingdom to Species)
- Present fruit and taxonomy chart to class

For more activities, visit:

www.harvestofthemonth.com

Student Advocates

- Color photographs have been shown to help increase school meal participation. Have students take photos of school meals and display on bulletin boards. Include nutrient analyses of meals and provide comparisons with lunches from home or other places.
- Have students identify ways to make a more walkable community. Work with school leaders and community members to begin implementation of the Safe Routes to School program. Visit **www.cawalktoschool.com** or **www.pbs.org/americaswalking** for more ideas.

Physical Activity Corner

Safe Routes to School National Partnership

In the past 30 years, the number of children who walk or bike to school has declined from over 50 percent to fewer than 15 percent. A new federal transportation bill has created a Safe Routes to School program. Visit the Web site below to learn more.

- Poll students on how they get to/from school (e.g., walk, bike, bus, carpool).
- Discuss factors that influence how they get to/from school (e.g., distance, parents, safety, lack of transportation).
- Determine what would need to change for students to walk or bike to/from school.
- Discuss ways the school community can start a Safe Routes program.*

*See *Student Advocates* activity above to encourage students to get started.

For more information, visit:

www.bikesbelong.org

Literature Links

- **Elementary:** *Harvest Year* by Cris Peterson, *What Grows from a Tree?* by Lola Schaefer and *Tangerine* by Colin Cheong.
- **Secondary:** *All About Citrus and Subtropical Fruits* by Maggie Klein, *Fruit Crate Art* by Joe Davidson and *Sell What You Sow* by Eric Gibson.

For more ideas, visit:

www.cfaitc.org/Bookshelf/Bookshelf.php

Next Month: Cabbages

CHAMPIONS for CHANGE
Network for a Healthy California

This material was funded by USDA's Food Stamp Program through the California Department of Public Health's *Network for a Healthy California*. These institutions are equal opportunity providers and employers. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483. © Copyright California Department of Public Health 2007.

Murcott (Honey Tangerine)[1]

Stephen H. Futch and Larry K. Jackson[2]

The actual origin of the Murcott (Figure 1) is unknown but is most likely a tangor which is a cross between a tangerine and a sweet orange. The early history discusses the possibility that the variety originated in a USDA planting around 1916. In about 1922, the early history states that Mr. Charles Murcott Smith had a nursery in Bayview, Pinellas County, Florida where several of these trees were located. Mr. Smith most likely obtained the original trees from the USDA.

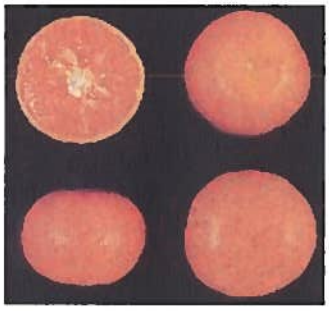


Figure 1. Murcott.

At the present time, it is the most widely grown late Florida tangerine and the fruit is marketed under the name Honey Tangerine; however, its official variety name is Murcott.

Fruit Characteristics

The Murcott fruit is medium in size, averaging from 2½ - 3 inches in diameter and has a shape that is typical of a true tangerine. The peel color is reddish orange and may be yellow orange in warmer winters, smooth, and while it can be peeled by hand it is somewhat more difficult to peel than a tangerine. The flesh is a rich orange color. Seed number will vary from 12 to 24 seeds per fruit and are white in color when cut.

The fruit matures in January-March making it the latest maturing tangerine type fruit, and it has excellent qualities for the fresh fruit market. The late maturation of the fruit may put it at risk in the event of a freeze.

The fruit and leaves are susceptible to citrus scab (Figure 2) and alternaria fungus disease. For more information on citrus scab see Fact Sheet PP-153, Citrus Scab and for Alternaria see Fact Sheet PP-152, Alternaria Brown Spot. The fruit is produced on the end of the branches with the blossom end directed upward and this may result in sunburn or sunscald to exposed portions of the fruit.

Figure 2. Scab on foliage and fruit.

Tree Characteristics

Murcott trees are moderately vigorous and have a distinctive upright, willow-like growth habit. Since the fruit is produced on terminal end in clusters, the weight of the fruit will cause the branches to bend and lodge and sometimes break in years of heavy crops.

The rootstock of choice is Cleopatra mandarin as compatibility problems with some stocks have resulted at various locations before the trees reach about 10 years of age. This compatibility problem has resulted on Carrizo citrange, and caution should be used in planting on any trifoliate or trifoliate hybrid.

Murcott trees are cold hardy, but the fruit will not withstand freezing temperatures and maintain necessary quality for fresh markets.

Cultivation

Murcott trees will grow throughout the major citrus production areas of the state of Florida.

Field observations have resulted in the listed items that should be considered.

1. In years of large crops, the nutritional requirements are increased due to the increased demand for both nitrogen and potassium. Murcotts will respond to high nitrogen and potash rates up to 400 lbs N and K_2O per acre in heavy production years. Up to one-half of the fertilizer should be applied during the fall in several applications as the fruit is ripening. In years of light crops, reduced rates of fertilizer should be used.
2. Murcotts are prone to alternate bearing. In cases of very large crops, root growth is limited and can result in tree death (referred to as Murcott collapse or Murcott decline). Growers should be aware of large crops and thin the fruit by pruning to reduce crop load to an acceptable level to prevent tree death. This pruning might require several light mechanical cuts or one heavy mechanical cut.
3. In years of heavy cropping, small fruit size can also be a problem. By reducing the crop by pruning, the remaining crop should increase in fruit size.
4. Fruit should be maintained in an acceptable manner as to make the fruit marketable for the fresh market. Murcott juice, while of good color, does contain limonin which reduces its uses in the juice markets.
5. Unlike many of the hybrids, Murcott does not require cross pollination with other cultivars.
6. Murcott as a variety is susceptible to xyloporosis regardless of the rootstock. Caution should be used in budwood selection to prevent the spread of xyloporosis into future plantings.

More Information

1. Castle, W.S., D.P.H. Tucker, A.H. Krezdorn, and C.O. Youtsey. 1989. *Rootstocks for Florida Citrus*. SP-42. University of Florida, Institute of Food and Agricultural Sciences. p. 3.
2. Jackson, Larry K. and Frederick S. Davies. 1999. Citrus Growing in Florida, Fourth Edition. University Press of Florida, Gainesvile, FL. pp. 100-101.

Papaya Nutrition Facts

Fruit Stain Treatments www.Tide.com/StainBrain
Berry Stains Look Great On Lips, Not On Clothes - How To Remove Them

Nutrition Courses www.GCNM.com
Accredited Home-Study Programs. Quick & Easy To Follow - Free Info!

Digestive Supplements Puristat.com/Digestive-Enzymes
Your Bloating and Gas Could be Age Related. Enzymes Help. Must Read.

Enzymatic vitamins WebVitamins.com
Find Incredible Savings on Enzymatic Therapy Products With Us!

AdChoices

Though it resembles a tree, a papaya plant is actually an overgrown herb, known as an *herbaceous perennial*. Grown worldwide in tropical climates, papaya is believed to have originated in Mexico and Central America.

The most common use for papaya is to aid digestion. Papayas are the only natural source of papain, an effective natural digestive aid, which breaks down protein and cleanses the digestive track. This means less food settles into the metabolism and becomes fat, making papayas' natural digestive properties an advantage to people trying to lose weight — especially for people who may cheat on their diets, said Homero Levy de Barros, president and CEO, Caliman International.

But in addition to assisting the body in digestion, papayas pack a nutritional wallop. Known as a "nutritional masterpiece," papayas are rich in vitamin C, folate, and potassium. They are also good sources of fiber, vitamin A, vitamin E, the eye-saving carotenoids lutein and zeaxanthin, and lycopene. A papaya has a lycopene level of about 2,000 ug per 100g (or 3,000 ug in one slice of papaya of 150g).

"You can debate which fruit is the number one in nutrition, depending upon a variety of factors," Levy de Barros said. "But for people who know the nutritional make-up of

fruit, certainly the papaya would be in the top three of almost everyone's list." Papayas have 33% more vitamin C and 50% more potassium than oranges with fewer calories. Papayas have 13 times more vitamin C and more than twice the potassium than apples. Papayas have four times more vitamin E than both apples and oranges.

Papayas vary in size, ranging from about 1 to 20 pounds and 7 to 20 inches long, depending on the variety. Eat about 2 cups of papaya daily.

A ripe papaya has a golden-yellow outer skin. On the inside, its flesh is smooth and silky with a deep yellow-orange or pinkish-orange color and a sweet-musky flavor. Its large center cavity is packed with small, round, black seeds, which are edible. Their peppery flavor tastes great in a salad or salsa or blended into sauces or salad dressings.

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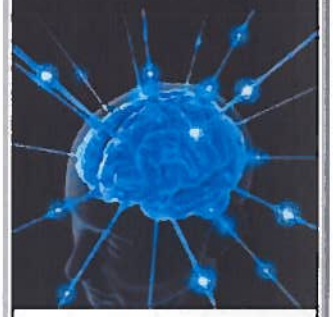


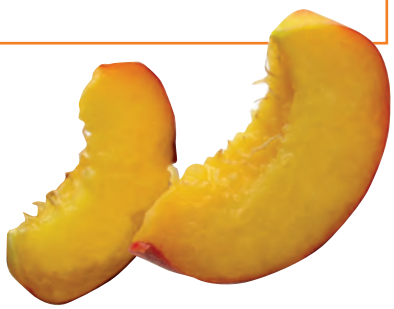
Edublox

Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

California's geography offers a bounty of fresh produce and recreational areas. From stone fruits and salad greens to state and local parks, there is no shortage of healthy foods to eat and outdoor activities to do in California. Studies show that healthy eating and physical activity are correlated with improved academic achievement. Use *Harvest of the Month* to allow students to experience California-grown fruit and vegetables with their senses. Teach students to live a healthy, active lifestyle and support academic content standards to link the classroom, cafeteria, home, and community.



Exploring California Peaches: Taste Testing

What You Will Need (per group of 8 students):

- Four ripe peaches and four ripe nectarines (two each of yellow and white varieties)*
- Paring knife and cutting board
- Paper towels

*Choose peaches and nectarines that are fragrant and firm to slightly soft when pressed.

Optional: Sample other stone fruits (cherries, plums, apricots, etc.) with peaches.

Activity:

- Distribute yellow peaches and nectarines to each student group.
- Observe the look, feel, and smell of each; record observations.
- Cut open the second yellow fruit; observe the taste and sound and record observations.
- Repeat with white peaches and nectarines.
- Discuss similarities and differences among the four varieties.
- Record students' favorite variety; share results with school nutrition staff.

For more ideas, reference:
Nutrition to Grow On, CDE, 2001.

Nutrition Facts

Serving Size: ½ cup peaches, sliced (77g)

Calories 30	Calories from Fat 0
	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 7g	2%
Dietary Fiber 1g	5%
Sugars 7g	
Protein 1g	
Vitamin A 5%	Calcium 1%
Vitamin C 9%	Iron 1%

PEACHES

Cooking in Class: Peach Smoothies

Makes 35 tastes at ¼ cup each

Ingredients:

- 6 fresh peaches, pitted and sliced
- 6 fresh nectarines, pitted and sliced
- 4½ cups plain nonfat yogurt (or milk)
- 4½ cups 100% orange juice
- 3 tablespoons honey
- Blender container
- Small paper cups

1. Blend all ingredients together with ice. (May need to do in 2 to 3 batches.)
2. Serve cold in cups.

Nutrition information per serving:
Calories 62, Carbohydrate 13 g, Dietary Fiber 1 g, Protein 3 g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 1 mg, Sodium 26 mg

Adapted from: *Kids Cook Farm-Fresh Food,* CDE, 2002.

Reasons to Eat Peaches

A ½ cup of sliced peaches (about half of a medium peach) provides:

- A source of vitamin A and vitamin C.
- A source of fiber*.

*Learn about fiber on page 2.

Champion Sources of Fiber*:

- Avocados
- Beans
- Blackberries
- Broccoli
- Papayas
- Raspberries
- Sweet potatoes
- Whole wheat cereals and breads
- Winter squash

*Champion sources provide a good or excellent source of fiber (at least 10% Daily Value).

For more information, visit:
www.nal.usda.gov/fnic/foodcomp/search/
(NDB No.: 09236)

What is Fiber?

- Fiber is a complex carbohydrate found only in plant foods like fruits, vegetables, grains, nuts, and seeds.
- Dietary fiber is important for lasting health benefits. It helps you feel full, helps keep your blood sugar level normal, helps to avoid constipation, and can help individuals maintain a healthy weight.
- Currently Americans consume only about half the amount of recommended fiber daily.
- Eating foods that are rich in fiber – like fruits, vegetables, dry beans, and whole grains – will help you meet your daily needs for fiber.
- The *2010 Dietary Guidelines for Americans* recommend 14 to 31 grams of fiber per 1,000 calories each day, depending on age and gender. To find out how much you need, visit **www.mypyramid.gov**.

For more information, visit:
www.teamnutrition.usda.gov
www.eatright.org/Public/content.aspx?id=6796&terms=fiber

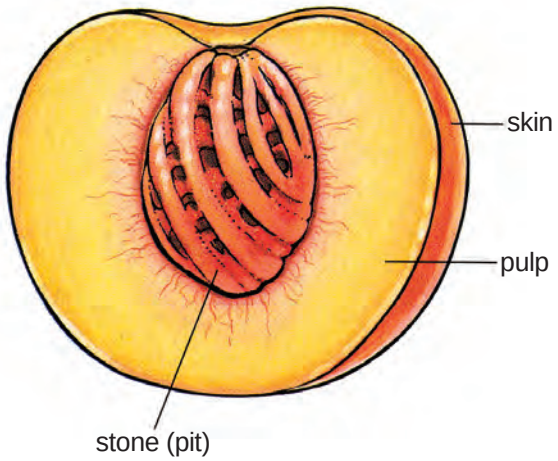
How Much Do I Need?

A ½ cup of sliced peaches is about one cupped handful. This is about the size of half of a medium peach. The amount of fruits and vegetables you need depends on your age, gender, and how active you are every day. Look at the chart below to find out how many cups of fruits and vegetables you and your students need. All forms count toward the daily amount – fresh, frozen, canned, dried, and 100% juice. Have students make a list of their favorite fruits and vegetables and how they like to eat them. Encourage students to share their lists with their families.

Recommended Daily Amount of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.



Adapted from: *Tall and Tasty Fruit Trees,* Meredith Sayles Hughes, 2000.

Download botanical image from **www.harvestofthemonth.com**.

Botanical Facts

Pronunciation: pēch
Spanish name: durazno
Family: Rosaceae
Genus: *Prunus*
Species: *P. persica*

The peach comes from a deciduous fruit-bearing tree of the rose family and is native to China. Its botanical name, *Prunus persica,* resulted from the original belief that peaches were native to Persia (Iran)*. Commercially, peaches and nectarines are treated as different fruits but they belong to the same species. The nectarine is a type of peach with a smooth, fuzzless skin.

Peaches are classified as a stone fruit, meaning that they possess a single large seed or stone surrounded by juicy flesh. Other common stone fruits include cherries, plums, and apricots. There are two major peach cultivars — clingstone and freestone — based on how the flesh sticks to the stone (or pit). Commercially, nearly all clingstone varieties are processed (pit removed), then canned, preserved, juiced, or used in other food products (e.g., baby food). Freestone peaches are primarily sold as fresh.

*Refer to *A Slice of Peach History* (page 3) for more information.

For more information, visit:
www.agmrc.org/commodities__products/fruits/peach_profile.cfm

How Do Peaches Grow?

Peach trees are warm-weather deciduous trees that grow 15 to 25 feet high. Susceptible to drought and frost, peach trees grow best inland and in warmer, tropical to subtropical climates. Most commercial trees are grafted cultivars, bearing fruit after about three to five years. Healthy trees reach peak production when about 10 years old and can live up to 20 years.

Unlike most fruit trees, the flowers of peach trees are produced in early spring before the leaves. Pruning is necessary during the spring to ensure quality fruit production. This technique of thinning increases the size and improves the taste of the fruit. Commercial growers use a machine to brush the peach skin after harvesting to remove most of the natural fuzz.

Soil	Deep, well-drained, sandy loam
Exposure	Full sun
Irrigation	Constant water supply, increased slightly before harvest
Planting	Bareroot trees planted in winter; pruning in spring
Harvest Season	June through September; peaks in July and August
Harvesting	Hand-picked when fruit is mature and firm; three to four times in three-day intervals
Storage	Refrigerated immediately to 35 F (slows ripening); then processed (clingstone) or shipped to market (freestone)

Adapted from: *Tall and Tasty Fruit Trees,* Meredith Sayles Hughes, 2000.

Home Grown Facts

- The United States is the world's leading grower of peaches. California also leads the country in peach and nectarine production – growing more than 84% of the nation's peaches and 95% of the nation's nectarines*.
- California is the nation's sole producer of clingstone peaches*.
- Peaches and nectarines rank in California's top 20 commodity exports (#17)*.
- Fresno County is the leading producer of the State's peach and nectarine crops.
- Other top peach-producing counties include Tulare, Stanislaus, Sutter, and Yuba. Tulare, Kings, and Kern counties are also leading growers of nectarines.

*2008 Data

For more information, visit:
http://usda.mannlib.cornell.edu/

School Garden: Garden Sweep

If your school has a garden, here is an activity you may want to implement. Look for donations to cover the cost of seeds, tools, irrigation systems, electric pumps, and any salary incurred by garden educators or others.

Gardens often contain many insects and can sometimes be damaged or destroyed by hungry pests. There are also helpful insects, though, that will eat the harmful kind. Do a sweep of your school garden and see what types of insects are helping or harming it.

What You Will Need:

- Quart-size (or larger) resealable plastic bags (one bag per team)
- Sweep nets (one or two per team)
- Cotton gloves
- Magnifying glasses
- Insect identification chart or field guide

Activity:

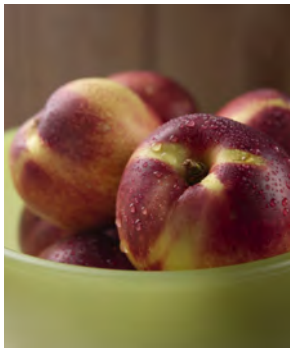
- Divide students into teams of five.
- Assign each team with a large area to sweep.
- Spend 15 to 30 minutes capturing insects using nets and transferring to the resealable bag*.
- Examine insects using the magnifying glasses.
- Use the chart or field guide to identify insects.
- Discuss student findings and observations as a class. Sample discussion topics include:
  - Insects that inhibit or damage the garden
  - Insects that help the garden
  - Seasonal insects

*Only students wearing gloves should transfer insects to bags to prevent insect bites or stings.

Adapted from: www.kidsgardening.com

For more ideas, reference:
A Child's Garden of Standards, CDE, 2002.
www.lifelab.org

A Slice of Peach History



- The peach tree originated in western China about 4,000 years ago.
- Alexander the Great introduced the peach to Greek and Roman society.
- From the Mediterranean and North Africa, the peach traveled north during the Middle Ages with the Moors to the Iberian Peninsula.
- Spanish and Portuguese explorers brought peaches to the Americas in the 1500s.
- Spanish missionaries in California planted the first peach trees in the mid-18th century.
- Russian immigrants brought peach seeds to San Francisco in the early 1800s and planted them near Fort Ross.
- Gold miners began California's commercial peach production in 1849 after demand for peaches could not be fulfilled by eastern supply.

For more information, reference:
Tall and Tasty: Fruit Trees, Meredith Sayles Hughes, 2000.

Student Sleuths

1. Name the two different forms of fiber. Describe the different ways in which each form acts in the digestive system. List food sources of each.
2. The store sells the following peach items: fresh peaches, frozen peach slices, dried peaches, canned peaches, peach fruit leather, and peach-flavored iced tea. You want to buy a peach item that will provide you with the most nutrients to help you reach your fruit and vegetable goals. Complete the following steps to determine which peach item will provide you with the most nutrients.
   a. Make a chart showing each of the peach items, nutrient values, and the approximate cost per serving.
   b. Which peach serving provides the most nutrients? The least?
   c. Which peach item will provide you with the most nutrients for the least cost?
3. Using a California map, identify the top 10 counties where clingstone peaches are grown. What geographic characteristics do these counties have in common? Hypothesize why these characteristics are ideal for clingstone peach production. Repeat for freestone peaches. Compare the lists. What are some geographical and climate differences between these areas? What determines if a county's geography is better for growing clingstone peaches versus freestones?

For information, visit:
www.cfaitc.org/factsheets/pdf/ClingPeaches.pdf
www.cdfa.ca.gov

Just the Facts

- Genetically, nectarines differ from peaches by a single recessive gene — the one that makes peaches fuzzy.
- Members of the rose family, peaches are related to the almond.
- Peaches rank among the top 10 most commonly eaten fruits and vegetables by California children.
- The peach is the state flower of Delaware and state fruit of South Carolina. Georgia is nicknamed *The Peach State*.
- In World War I, peach pits were used as filters in gas masks.

For more information, visit:
www.cfaitc.org/factsheets/pdf/ClingPeaches.pdf

Cafeteria Connections

School meals can be a source of many fiber-rich foods*. Invite school nutrition staff to your classroom to help students identify fiber-rich foods on the menus (lunch, breakfast, snacks). The school nutrition staff can also talk about the health benefits of fiber. Students can develop a list of their favorite fiber-rich foods they would like to see on the school menus. Encourage students to share lists with school nutrition staff and to create posters promoting fiber-rich foods for display in the cafeteria.

Helpful Hint:

Schools can order a variety of fiber-rich foods through USDA commodity food programs. Visit **www.fns.usda.gov/fdd/foods/foods_available.htm** to learn more.

*For these purposes, "fiber-rich foods" includes foods that provide at least 5% Daily Value.

Physical Activity Corner

- Divide class into two groups and mark a boundary between groups with rope or chalk.
- Use cones to make a circle (6 paces across) near the outside edge of each territory; this is the "peach."
- Inside each circle place a "stone" (use a peach pit that has been washed or a beanbag).
- On a signal by teacher, any or all of each group may leave their territory and try to capture the other group's stone and bring it back to their territory without being tagged. If student is tagged, he/she freezes and waits for a teammate to high-five to unfreeze.
- Students should only enter the "peach" if trying to capture the stone.

Helpful Hint:

For safety, avoid fast running.

Source: Physical Activity Specialist, Northcoast Region, *Network for a Healthy California,* 2011.

For more ideas, visit:
www.pecentral.org

Adventurous Activities

History Exploration:

The peach has a rich history in ancient China and Japan, as well as Roman and Greek mythology. Research the peach's role in Asian folklore and cultural traditions. What does the peach symbolize and what is its significance? Write a short paper describing the peach's significance in Asian culture and compare it to its significance in Roman and Greek mythology.

For more ideas, visit:
www.harvestofthemonth.com

Student Champions

Local parks often need the support of community members to provide a safe and clean environment for recreation. Clean up litter, plant trees, or volunteer at a local park to instill pride and community ownership. Encourage students to get involved — it may help them become more active, both physically and as leaders in their community.

Getting Started:

- Choose a local neighborhood park. Contact the local city or county parks department.
- Work with department officials to make a list of improvement projects to enhance the park.
- Prioritize the list and select a project.
- Organize and promote a neighborhood event to complete the project.
- Talk to neighbors about ways to keep the park safe and clean. Or, make a flyer with tips and distribute to community members.
- Write and submit an article to a local paper about the activities.

For more information, visit:
www.parks.ca.gov

Literature Links

- **Elementary:** *Growing Seasons* by Elsie Splear, *James and the Giant Peach* by Roald Dahl, and *Peach Boy: A Japanese Legend* by Gail Sakurai.
- **Secondary:** *Epitaph for a Peach* by David Masumoto, *Family Trees: The Peach Culture of the Piedmont* by Mike Corbin and *Tall and Tasty: Fruit Trees* by Meredith Sayles Hughes.

For more ideas, visit:
www.cfaitc.org/books

This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from USDA SNAP, known in California as *CalFresh* (formerly Food Stamps). These institutions are equal opportunity providers and employers. *CalFresh* provides assistance to low-income households and can help buy nutritious foods for better health. For *CalFresh* information, call 1-877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © 2011

November – Featured Fruit: PEAR

Pick a better snack™

WASH. EAT.
(how easy is that?)

Hello! I'm Penny Pear[1] and I'm a Bartlett pear.

There are more than 3,000 varieties of pears, but I am the most popular. Anjou, Bosc, Comice and Asian pears are a few of the other varieties you'll want to try too. They come in different shapes, colors and flavors and are sweet and juicy-- make sure you try them all!

Are you ready to come along with me on an exciting pear adventure? Let's have fun exploring all the cool stuff about pears.

Facts

Pears are a member of the rose family.

Pear trees can live 100 years, but they are usually replaced in the orchards after 30 or 40 years. This allows them to produce the most and the best tasting fruit each year.

Pears are available year-round.

Pears are a good source of vitamin C and fiber.

Pears ripen better off the tree and ripen from the inside out.

Ripen pears in a brown paper bag at room temperature.

There are more than 3,000 varieties of pears grown in the world. Bartlett pears are the most popular variety in the United States. They are used for dried pear products and canning.

History

It is believed that pears were used as food by Stone Age people.

The ancestor of today's popular pear varieties are from regions in southeastern Europe and western Asia.

The first pear tree was planted in America in 1620.

In the early 1700s, pears were nicknamed "butter fruit" because of their soft, melting texture.

Source: [1]Dole 5 A Day. www.dole5aday.com

November – Featured Fruit: PEAR

Pick a better snack™

WASH. EAT.
(how easy is that?)

Where Grown

More than 95 percent of the pears sold in the United States are grown in Washington, Oregon and Northern California.

60% of all Bartlett pears grown in the United States come from California.

Pears come from other countries too – Chile ships the most, but New Zealand, Australia, Argentina, and Canada also ship pears to the United States.

Types

There are many more types of pears than you might guess – more than 3,000 varieties. Now, that's a lot of pears! In the United States, four pear varieties are commonly available: Bartlett, Anjou, Bosc and Comice, along with a few specialty types like Asian and Nellis pears.

Bartlett pears are shaped like a bell and turn from green to yellow when ripe. Bartletts are very sweet and juicy and are excellent for fresh eating or in salads and desserts. They are also good for dried pear products and canning. Red Bartlett pears are delicious too, and turn bright red when ripe. Bartlett pears are available from July through December.

Anjou pears are oval-shaped with a smooth, thin skin on the outside. They are light green to yellow-green in color and do not change color as they ripen. Anjous are very sweet and juicy and are great for fresh eating or in salads and desserts. They are available from October through June.

Bosc pears have a long neck and stem with a rough skin on the outside. They are cinnamon brown in color and do not change color as they ripen. Bosc pears are excellent for baking and eating fresh and are sweet and juicy. They are available from August to May.

Comice pears are round with a short neck and stem. They are greenish-yellow in color and may have a reddish blush. Comice pears do not change color as they ripen. They are very sweet and juicy and are great for eating fresh or in salads and desserts. Comice pears are available from August through April.

Nutrients

- A good source of dietary fiber and vitamin C

Source: [1]Dole 5 A Day. www.dole5aday.com

Forelle

For what they lack in size, Forelle pears make up in sweet flavor and beautiful appearance. Known as a great "snacking" pear, Forelles are as wonderful to eat as they are beautiful to see on display!

Identifying Forelle Pears

Forelles are one of the smallest varieties of pears, a little larger than Seckel pears. Their symmetrical body, often bell-shaped, begins with a small round base that tapers evenly to a short neck. Their stem is usually long, straight, and narrow. A unique characteristic are the red lenticles, or freckles, that set this variety apart. Their flesh is moist and crisp.

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Availability

Forelles are perhaps one of the best kept secrets of pear lovers. Their overall crop size is among the most limited of all commercially grown pears in the Northwest. However, that is no reflection upon the demand for Forelles by those who are familiar with the variety. They are available from October through March, so don't pass an opportunity to buy these bite-size delights whenever you find them displayed in the markets where you shop.

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Ripening

Forelles are one of the few varieties of pears that do change color as they ripen. An attractive red freckling, called "lenticles," remains brilliantly visible while an underlying green skin turns bright yellow as they ripen. Like all pears, Forelles ripen at room temperature. The length of time necessary to ripen Forelles depends on how ripe the fruit is when purchased. It may take several days before Forelles begin signaling ripeness. However, the wait is rewarded with a beautiful transition in the fruit's appearance, and a delicious, sweet and tangy flavor with a satisfying crisp texture.

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The Unique Beauty of Forelles

Forelles are one of the most colorful pears. Their red lenticles appear in bright contrast to their brilliant yellow skin when ripe. A bowl full of ripening Forelles provides a beautiful and edible centerpiece, particularly during

the holidays and other special occasions.

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Culinary Uses

Because of their small size, Forelles are typically not the best choice for most recipes; the exception being those that showcase the Forelle's unique characteristics, like in colorful salads and other fresh uses. It is their small size, however, that makes Forelles a good choice as snacking pears. They are very sweet, with a flesh that is slightly firmer than most other pears. Their size, festive appearance, and naturally sweet flavor make Forelles a winner in children's lunch boxes. Trade a Forelle for a Twinkie? No way!

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History

Forelles are a very old variety, and are thought to have originated sometime in the 1600's in northern Saxony, Germany. The name Forelle translates to mean "trout" in the German language. It is believed that the variety earned this name because of the similarity between the pear's brilliant red lenticles and the colors of a Rainbow trout.

Forelles were introduced to the United States by German immigrants in the 1800's, and they are now produced in the Pacific Northwest states of Oregon and Washington.

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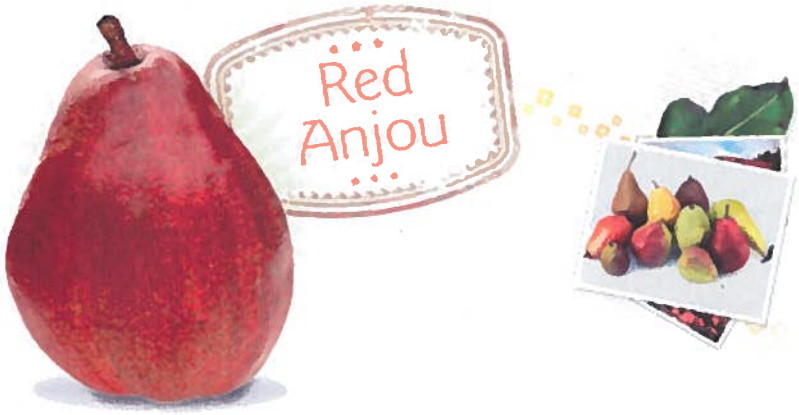
Red Anjou



Red Anjou pears are much like their green counterparts in all respects other than color. Their shape, flavor and texture are similar, and it's their deep, rich, maroon color that sets this variety apart, particularly as a showy pear among pears in a fruit bowl or basket.

Identifying Red Anjou Pears

With a silhouette identical to Green Anjous, Red Anjous are just as easy to identify by their shape. Although there are other red varieties of pears available, such as Red Bartlett, Red Anjous are recognizable for their egg-shaped appearance; having a large spherical lower potion that begins a gradual and even taper above the mid-point to a smaller, rounded top. The color of Red Anjous varies from pear to pear, however they are generally dark maroon in color, sometimes with light vertical streaks of color that were naturally created by the sun while the pear was still on the tree.

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Seasonality of Red Anjou Pears

The popularity of Red Anjous has brought a great deal of attention for this variety. Planting of Red Anjou pear trees in the Pacific Northwest has been on the increase, and they can now be found in markets from late September or early October through the spring months.

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Ripening

Red Anjous show only slight change in color as they ripen, which is another characteristic shared with their Green Anjou counterparts. The best indication of ripeness for any pear is the thumb test: gentle thumb pressure near the stem will yield slightly when the pear is ripe.

Red Anjous, like all pears, ripen when held at room temperature. Depending on their level of ripeness when purchased, it may take several days before they are ready to eat. The results, however, are well worth the wait. Red Anjous develop a mild, sweet flavor with very smooth texture and abundant juices when ripe.

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Beautiful Red Displays

Although they share most characteristics with Green Anjous, Red Anjous do possess one very distinctive appeal - their color. Displayed in a fruit bowl or basket on a counter or as a table centerpiece, their color sets a brilliant tone. Consider a full display of Red Anjous for Valentines Day. During the winter holidays, combine Red and Green Anjous to create a display with the appropriate colors of the season.

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Culinary Uses

Because their red color is only skin deep, you'll notice no difference in cooking with Red Anjous than using Green Anjous if the recipe calls for peeling the pears. However, in a recipe calling for fresh pears (if leaving the skin on) the red color can add striking contrast and eye appeal. Consider a garden green salad tossed with slices of Red Anjou pears!

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History of Red Anjous

Red Anjous originated as naturally occurring bud sports found on Green Anjou trees. "Bud sports" are spontaneous, naturally occurring transformations that crop up on trees, and they are most often unnoticed. Red Anjous, however, are an exception. Actually, they are an exception that occurred twice, as the first red sport of Anjou was discovered in the early 1950's near Medford, Oregon, and a second red sport was discovered in the late 1970's in Parkdale, Oregon.

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Bosc

Bosc are an elegant variety, with distinctive characteristics that set them apart from other pears. Those who are familiar with Bosc appreciate their crunchy yet tender flesh and their sweet-spiced flavor. A common misconception is that Bosc pears need to be peeled or cooked before being eaten, and that's simply not true. Those who have not tried a Bosc would most likely be surprised... and pleased that the brown skin hides a delicious, spicy and slightly firmer flesh.

Identifying Bosc Pears

Bosc pears stand out in a crowd for many reasons. Their long, curved stem and elegant elongated neck that widens gradually to a full rounded base creates a silhouette that is unique among pears. Bosc are also unique for their color: a warm cinnamon brown with russeting over the surface of the skin.
Russeting is a natural appearance for Bosc. The russeting may cover the entire surface of the pear or it may just be seen over a small portion of the skin. In either case, the quality of the fruit is not affected. In fact, many artists feature the russeted Bosc pear in their paintings, drawings, and photography because of the natural beauty it imparts.
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Seasonality

Bosc pears are a very popular variety and when they are in season they can be found in most grocery stores. Look for them in the produce section starting in late September. During the fall and winter months, they are often part of a large display of many different varieties. Harvest for Bosc pears begins in the fall in Oregon and Washington, and they are in season from late September through April or May.
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Ripening

Bosc pears are sweeter and more flavorful earlier in the ripening process than other pear varieties. As a result, the complex flavor, honey-sweetness, and juiciness of Bosc can be enjoyed before their flesh has fully softened.
Since the flesh density of Bosc is greater than other pears, it's important to take this into consideration when determining when Bosc pears are ripe. The Check the Neck™ test, where gentle thumb pressure is applied near the stem end, is still the best method for checking Bosc for ripeness. However, keep in mind that Bosc will "give" less than other pears when they are ready. Sometimes, Bosc will also show a slight wrinkling at the base of the stem as well as a minimal color change as they ripen-- a green hue under the russeted skin will turn more yellow. However, color change is not as reliable as Checking the Neck™.

Ripen Bosc pears as you would any other variety: leave them at room temperature and only refrigerate after the pears have ripened.

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Culinary Uses

Bosc pears have a more firm, dense flesh than other pear varieties, so they are ideal for use in baking, broiling or poaching. They retain their shape and texture better than other varieties, and their flavor is less likely to be overwhelmed by the use of strong spices like cinnamon, clove or nutmeg. Of course, they are also excellent for fresh eating, particularly by those who prefer a firm texture.

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History of Bosc

Bosc pears have an interesting, and as yet, not completely resolved history. It remains a matter of contention whether Bosc are of Belgium or French origin. What is known is that Bosc Pears were discovered sometime in the early 1800's. At that time, the European convention for naming pears was to use a two-name system, where the first name identified a characteristic of the fruit, and the second name referenced its origin or propagator.

Bosc, however, are known in various parts of the world by several names. Buerré Bosc identifies the fruit as "buttery" and named after M. Bosc who was the director of the Paris Botanical Garden. Calabasse Bosc is another name, and references the fruit as "gourd-shaped". Then there is the name Buerré d'Appremont, where the variety is named for a French town.
Some believe that Buerré Bosc was first raised from a seed about 1807 in Belgium by Mr. M. Bosc. Others contend that Buerré d'Appremont were discovered about 1830 as a very old seedling tree in the city of Appremont, France.

Today, Bosc are also called Kaiser Alexander in some countries.

Here in the United States, the history of Bosc Pears is more certain. The variety was first planted in 1832 or 1833, and those trees first bore fruit in 1836. The first plantings were done in the eastern U.S., on large estate orchards and later commercial orchards. Now Bosc are grown largely in the Northwest, as the trees were found to thrive best in the soil and climate of the Pacific Northwest states of Oregon and Washington.

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Vegetable of the Month: Bell Pepper

Bell peppers are a great source of vitamins A and C. They make a colorful addition to any meal.

Varieties

Bell peppers can be found in a rainbow of colors and can vary in flavor. The variety of the pepper plant and the stage of the ripeness determine the flavor and color of each pepper. For example, a red bell pepper is simply a mature green bell pepper. As a bell pepper ages, its flavor becomes sweeter and milder. Red bell peppers contain eleven times more beta carotene than green bell peppers.

Selection

Bell peppers are available and are in good supply all year, but they are more plentiful and less expensive during the summer months. Fresh peppers come in variety of colors, shapes, and sizes, but when selecting them, they all follow the same guidelines. Their skin should be firm without any wrinkles, and the stem should be fresh and green. They should feel heavy for their size. Avoid peppers with sunken areas, slashes or black spots.

Storage

Store unwashed bell peppers in a plastic bag in the refrigerator. They will stay fresh for about a week. Green bell peppers will stay fresh a little longer than the yellow and red ones.

Green Bell Pepper

Serving Size ½ cup, chopped (75g)

Amount Per Serving
Calories 20
Calories from Fat 0

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 1.5mg	0%
Total Carbohydrate 5g	1%
Dietary Fiber 1g	4%
Sugars 2g	
Protein 1g	
Vitamin A	4%
Vitamin C	60%

Red Bell Pepper

Vitamin A	45%
Vitamin C	240%

Yellow Bell Pepper

Vitamin A	2%
Vitamin C	230%

*** Percent Daily Values are based on a 2,000 calorie diet.**

Recipes

Vegetarian Stuffed Peppers
Makes 8 Servings.

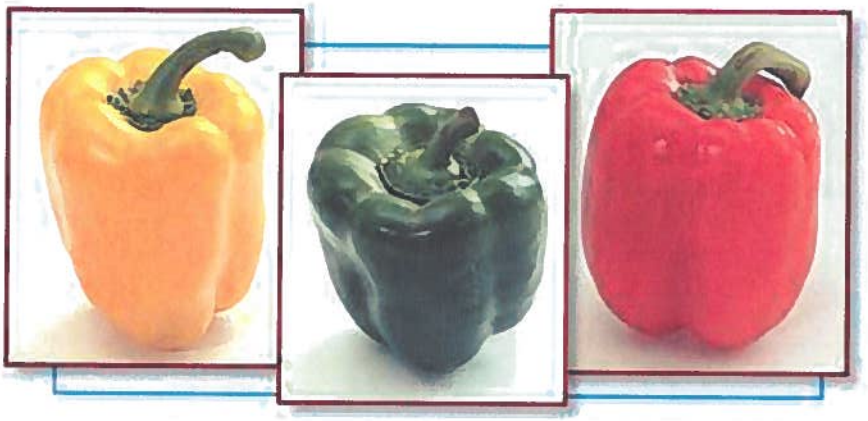
Ingredients

4 red or green bell peppe
1 pint or 2 cups cherry tomato
1 mediu onion

1 cup fresh basil leaves
3 garlic cloves
2 tsp olive oil
¼ tsp Salt
¼ tsp pepper

Preheat oven to 425°F. Lightly oil a large shallow baking pan. Cut peppers in half lengthwise and remove seeds. Arrange peppers cut sides up in baking pan and lightly oil cut edges of stems. Halve cherry tomatoes and chop onion and basil. Finely chop garlic. In a bowl toss tomatoes, onion, basil, garlic, 2 tbsp. oil, salt and pepper to taste. Divide mixture among peppers and roast in upper third of oven until peppers are tender, about 20 minutes.

Nutritional Analysis per serving: Calories 41, Total Fat 1.4g, Saturated Fat 0.3g, Carbohydrates 7g, Protein 1g, Cholesterol 0mg, Fiber 2g, Sodium 78mg, Carbohydrates 63%, Protein 10%, Fat 27%.



Find more in our recipe database!

This site contains documents available in Adobe Acrobat Reader format (PDF). To view or print them, you must have Adobe Acrobat Reader (version 3.0 or higher) installed on your computer. You can download it for free from Adobe Corporation.

Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Research has long supported a positive correlation between students' healthy eating habits and performance in the classroom. To some, eating the recommended daily amounts of fruits and vegetables can seem challenging. Remind students that all forms of fruits and vegetables count—fresh, frozen, canned, dried, and even 100% juice. Encourage students and parents to eat a nutritious breakfast and pack healthy snacks and lunches, or to enroll in the school's meal programs. *Harvest of the Month* can help empower your students to eat their recommended daily amounts—and improve learning!

Exploring California Peppers: Taste Testing

Getting Started:

- Contact school nutrition staff about getting bell peppers for taste testing. Or, harvest peppers from your school garden, a local farm, or farmers' market.*

What You Will Need (per group):

- 3 bell peppers (1 each of green, yellow/orange, red)
- Paring knives and cutting boards
- Printed botanical image and Nutrition Facts labels for peppers**

Activity:

- Make predictions if green, yellow, and red peppers will smell and taste different.
- Explore the look, feel, and smell of each bell pepper. Record observations.
- Cut open peppers. Record observations of color, smell, and texture of the interior.
- Draw cross-section diagram and compare to printed botanical image. Label parts.
- Taste each bell pepper and record observations.
- Discuss predictions and observations. Take a vote of students' favorite variety.
- Compare and contrast the nutrients using the Nutrition Facts labels. Refer to *Students Sleuths #1* on page 3 for questions.
- Complete follow-up exercise in *Adventurous Activities* (page 4).

*Visit **www.localharvest.org** for locations.
Download from the Educators' Corner of **www.harvestofthemonth.com.

For more ideas, reference:

School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39-42.

Nutrition Facts

Serving Size: ½ cup chopped sweet green pepper (74g)

Calories 15 — Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 3g	1%
Dietary Fiber 1g	5%
Sugars 2g	
Protein 1g	

Vitamin A 5% — Calcium 1%
Vitamin C 99% — Iron 1%

PEPPERS

Cooking in Class: Pico de Gallo

Ingredients:

Makes 36 tastes at ¼ cup each

- 3 pounds ripe tomatoes, chopped
- 4½ cups chopped onion
- 1 cup chopped fresh cilantro
- 3 small jalapeño peppers, seeds removed, chopped
- 6 tablespoons lime juice
- 6 cloves garlic, minced
- ¾ teaspoon salt
- Baked tortilla chips
- Small cups

1. Combine all ingredients (except chips) in a medium bowl.
2. Spoon into cups. Serve with chips.

Adapted from: *Healthy Latino Recipes, Network for a Healthy California,* 2008.

For more recipes, visit:
www.cachampionsforchange.net.

Reasons to Eat Peppers

- A ½ cup of hot peppers (red and green) is an excellent source of vitamin C. It is also a good source of vitamin A, vitamin K, and vitamin B_6.
- A ½ cup of sweet green peppers is an excellent source of vitamin C.
- A ½ cup of sweet red peppers is an excellent source of vitamin A and vitamin C and a good source of vitamin B_6.

Champion sources of vitamin B_6:*

- Avocados
- Bananas
- Peppers
- Potatoes

*Provide a good or excellent source of vitamin B_6.

What is Vitamin B_6?

- Vitamin B_6 (pyridoxine) is one of eight B vitamins: thiamin (B_1), riboflavin (B_2), niacin (B_3), pantothenic acid (B_5), biotin (B_7), folate (B_9), and cobalamin (B_{12}).
- These water-soluble vitamins are essential for growth, development, and a variety of other bodily functions. They play a major role in the activity of enzymes (proteins) that regulate chemical reactions in the body, such as turning food into energy.
- Vitamin B_6 helps the body break down or metabolize protein, aids in the formation of red blood cells, and helps maintain normal brain function. It also plays a role in synthesizing antibodies in the immune system.
- A diet that includes whole grain products, fruits, and vegetables is sufficient to provide the body with the B vitamins it needs. (NOTE: Freezing causes a decline in the amount of vitamin B_6 in foods.)

For more information, visit:
http://ods.od.nih.gov/factsheets/vitaminb6.asp

How Much Do I Need?

A ½ cup of chopped peppers is about one small pepper. The number of cups of fruits and vegetables you need depends on your age, gender, and physical activity level. (Students need at least 60 minutes of physical activity!) All forms of fruits and vegetables count—fresh, frozen, canned, and dried! Look at the chart below to find out how much your students need.

Recommended Daily Amounts of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.

How Do Peppers Grow?

Peppers are warm-season crops, sensitive to freezing, and do not grow well in cold, wet soil. It is best to germinate seeds indoors in late winter and then transplant to the garden in late spring. In California, peppers are harvested from late April in the southern desert regions through November in the Central Valley region. Sweet peppers were almost always harvested when green (immature), but more recently, are harvested when red and yellow. Hot peppers are harvested at any stage, depending on variety, use, and intended flavor. Usually, redness is a sign of ripeness, not hotness.

For a chart with information about how to plant and grow peppers, refer to *Peppers Botanical Images* (in the Educators' Corner) on **www.harvestofthemonth.com**.

For more information, visit:
www.cfaitc.org/GardenGuide/pdf/GardenGuidePart3.pdf

Botanical Facts

Pronunciation: pĕp'ər
Spanish name: pimentos/pimentones
Family: Solanaceae
Genus: *Capsicum*
Species: *Capsicum annuum*

The pepper plant is a member of the *Solanaceae* or "nightshade" family, which also includes tomatoes and potatoes.* Peppers are botanically a fruit of *Capsicum* plants. However, in the culinary world, people recognize peppers as a vegetable. Nearly 2,000 varieties of peppers are cultivated worldwide. They are commonly grouped into two categories: hot (chili) and sweet peppers.

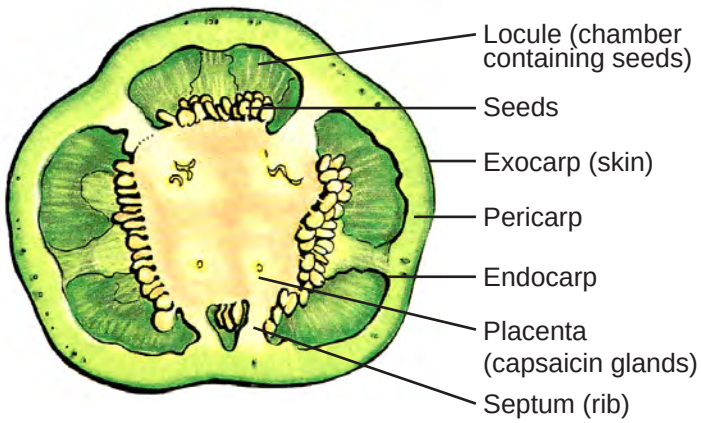
Hot peppers are named for their fiery, hot taste. They contain *capsaicinoids*, natural substances that feel hot in the mouth. *Capsaicin,* the primary capsaicinoid, is a flavorless, odorless substance that acts on pain receptors in the mouth and throat. Hot peppers can be picked at any stage, but are hottest when fully ripe. They ripen into yellow, orange, purple, red, and even brown. Each variety differs in flavor and heat intensity depending on the number of *capsaicinoids* in the pepper.**

Sweet peppers were not widely grown until after World War II. Today, there are more than 200 varieties. When left to ripen, green peppers mature into red, yellow (or orange), and purple peppers with various levels of sweetness.

Sweet Peppers	Hot Peppers
Bells (Red, Early, Golden, Shamrock, California Wonder, Keystone Resistant Giant, Yolo Wonder), Banana, Cubanelle, Pimento	Hungarian Wax, Cayenne, Jalapeño, Serrano, Anaheim (California Green Chile), Ancho, Cherry, Poblano, Habañero, Chile de Árbol

*For information about "nightshade" family, refer to *Tomatoes* newsletter. Or, refer to *Peppers Adventurous Activities* on **www.harvestofthemonth.com**.
**Do *Student Sleuths #3* on page 3 to learn more about capsaicinoids.

For more information, visit:
www.urbanext.uiuc.edu/veggies/peppers1.html#8
http://aggie-horticulture.tamu/edu/extension/easygardening/pepper/pepper.html



Source: *Cool as a Cucumber, Hot as a Pepper,* Meredith Sayles Hughes, Lerner Books, 1999.

School Garden: Pepper Plants

As an annual plant, peppers require year-round work. Here is a monthly tasks calendar for growing peppers.

- January-March: Plant seeds indoors in container gardens; prepare rows in outdoor garden.
- April: Transplant seedlings to garden rows and fertilize; protect under covers if weather drops below 50 F.
- May: Fertilize at bloom set.
- June: Fertilize at fruit set, post stakes in garden beds.
- July-September: Harvest peppers.
- October: Replace covers over plants; continue harvest.
- November: Remove covers, add compost, till row beds.
- December: Expose to weather and add more compost.

Helpful Hints:

- Instead of growing from seed, buy plants about 4-6 inches tall and plant in late spring or early summer.
- If you plan to grow "fall" peppers, plant them 12-16 weeks before the first expected frost.

For more ideas, visit:
www.csgn.org

Student Sleuths

1. Compare the Nutrition Facts labels for sweet and hot peppers, both red and green varieties. What nutrients are the same for all peppers? What nutrients are different? Which variety has the most vitamin A? List the excellent sources for both sweet red and green peppers. Why does the nutrient content of a sweet pepper increase as it ripens (becomes red)?
2. What is vitamin B_6? What role does it play in the body's functions? What happens if you are deficient in vitamin B_6? What happens if you have too much vitamin B_6? Make a list of foods that are excellent (>20%) or good (10-19%) sources of vitamin B_6.
3. What are *capsaicinoids*? What part of the pepper contains capsaicin? Why are some peppers hotter than others? How is the "hotness" level measured? What unit is used to measure the amount of capsaicin or "heat" in peppers? What is the best way to get relief after eating a very hot pepper: drink water or milk? Why?

For information, visit:
Dietary Reference Intakes: The Essential Guide to Nutrient Requirements, Institute of Medicine, 2006.
www.fruitsandveggiesmatter.gov
www.nal.usda.gov/fnic/foodcomp/search/

Student Advocates

Encourage students to visit a local retail store to learn more about the produce section and to share ideas for how the store can help support healthy eating in the community. Distribute copies of the *Harvest of the Month* Fact Sheet to store managers. Share copies of community newsletters for managers to distribute to customers.*

Get Connected:

- Visit local grocery stores and go to produce section.
- Make a list of all pepper varieties for sale.
- Circle sweet varieties. Underline hot varieties.
- What is the average cost for sweet peppers? For hot peppers?
- Are the peppers grown in California?
- Does the store offer brochures or recipe cards with serving ideas for peppers?
- Talk to produce manager and share your findings.
- Tell manager about your school's participation in *Harvest of the Month*. (Show Fact Sheet and community newsletters.) Share three ideas you have for how they can promote peppers during summer.

*Download from the Educators' Corner of **www.harvestofthemonth.com**.

Home Grown Facts

- California is the nation's leading grower of bell peppers and ranks second in production of hot peppers.
- Four main growing regions in California harvest peppers from April through November: southern desert valleys (Imperial and Riverside), the southern coast (San Diego, Orange, and Ventura), the central coast (San Luis Obispo, Monterey, San Benito, and Santa Clara), and the Central Valley (Kern, Tulare, Fresno, Merced, Stanislaus, Sacramento, and San Joaquin).
- There is five times more acreage in California for production of sweet peppers (about 28,000 acres) than for hot peppers (about 5,500 acres).

2007 Data

Activity:
Research one of the four main growing regions. Describe the geography (land, soil, climate) and why it is a good region for growing peppers. What other crops are grown in these regions?

For more information, visit:
www.cdfa.ca.gov
http://anrcatalog.ucdavis.edu/pdf/7244.pdf
http://anrcatalog.udavis.edu/pdf/7217.pdf

Cafeteria Connections

Work with your school nutrition staff to feature peppers.

- Dry hot peppers by stringing them on a "ristra." Display in the cafeteria.
- Conduct a taste test of raw and cooked bell peppers. Offer samples in the lunch line or salad bar.
- Print menu slicks and feature peppers in the monthly school menu. Highlight every time it is in a school meal.

For tips on drying and roasting peppers, visit:
www.urbanext.uiuc.edu/veggies/peppers1.html#8

Physical Activity Corner

California summers are perfect for going outdoors to be active. Students need at least 60 minutes of physical activity every day. With warmer temperatures, it becomes more important for students to stay hydrated when active.

Activity:

- What does water do in the body?
- Why is water essential to our bodies?
- What is dehydration? What are the symptoms?
- How can we get enough water daily?
- Why do you need more water when active?
- Based on your weight, how many ounces of water do you need?
- When active, how many more ounces do you need?

Remind students to drink water before, during, and after physical activity.

For information, visit:
www.cdc.gov/nccdphp/dnpa/nutrition/nutrition_for_everyone/basics/water.htm

Adventurous Activities

Botanical Investigation

What You Will Need (per group):

- 1 each bell pepper, eggplant, and tomato
- Printed botanical image of peppers*
- Microscope or magnifying glass

*Download from the Educators' Corner of **www.harvestofthemonth.com**.

Activity:

- Cut each vegetable in half.
- Draw a cross-section diagram for each and label the parts. (Use botanical image for assistance.)
- Compare and contrast the differences.
- Use microscope to compare the flesh and seeds.
- Share findings as a class and discuss how the seeds differ from other plants that are not a part of the nightshade family (e.g., green beans and squash).

Adapted from: www.healthylausd.net

Activities & Resources Galore

Visit the Educators' Corner online for more resources:

- Cooking in Class (recipe analyses, cooking tips)
- Reasons to Eat (Nutrition Glossary)
- How Does It Grow (botanical images, growing tips)
- Student Sleuths (Answer Key)
- Adventurous Activities
- Literature Links (book lists)
- Links to California Content Standards (all grades)

All available at www.harvestofthemonth.com.

Just the Facts

- By weight, green bell peppers have twice as much vitamin C as citrus fruit. Red bell peppers have three times as much. Hot peppers contain even more—357% more vitamin C than one orange.
- As bell peppers mature (become red), their taste becomes sweeter and milder.
- The amount of heat in a hot pepper depends on the variety, soil, climate, and other conditions. Within a variety, larger peppers are usually milder because the proportion of white membrane to their size is smaller.

Activity:

Study the Nutrition Facts labels for sweet and hot peppers (red and green varieties).*

- How much higher in beta carotene are sweet red peppers over green ones? What is the difference for red and green hot peppers?

*Download from the Educators' Corner of **www.harvestofthemonth.com**.

For more information, visit:
www.fruitsandveggiesmatter.gov/month/

A Slice of Pepper History

- About 9,000 years ago, the wild pepper plant originated near Bolivia and Peru. It was later cultivated for its fruits by the Olmecs, Toltecs, and Aztecs.
- The seeds rapidly spread throughout Central America by wind and movement of settlers.
- Columbus discovered peppers in the West Indies and mistook them for spices. He brought them to Europe where they spread throughout Europe, Africa, and Asia.
- The Pueblo Indians of the American Southwest acquired a wild chili pepper called *chiltepín* through trade with native Mexicans.
- Juan de Oñate (founder of New Mexico) and Spanish explorers are credited with bringing peppers to the U.S. in 1583.

For more information, visit:
http://aggie-horticulture.tamu.edu/PLANTanswers/publications/vegetabletravelers/pepper.html
www.hort.purdue.edu/newcrop/proceedings1993/v2-132.html

Literature Links

- Invite your school librarian to help with your school garden. Ask for a list of sources for summer gardening activities.
- Ask librarian to have a reading session about peppers and other nightshade crops in the school garden.
- Help coordinate a class alliteration contest on peppers. Winners can receive special library passes or books.

This material was produced by the California Department of Public Health, *Network for a Healthy California,* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households, and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © California Department of Public Health 2009.

CHAMPIONS for CHANGE
Network for a Healthy California

Potato

From Wikipedia, the free encyclopedia

The **potato** is a starchy, tuberous crop from the perennial *Solanum tuberosum* of the Solanaceae family (also known as the nightshades). The word potato may refer to the plant itself as well as the edible tuber. In the region of the Andes, there are some other closely related cultivated potato species. Potatoes were first introduced outside the Andes region four centuries ago, and have become an integral part of much of the world's cuisine. It is the world's fourth-largest food crop, following rice, wheat, and maize.[1] Long-term storage of potatoes requires specialised care in cold warehouses.[2]

Potato

Potato cultivars appear in a huge variety of colors, shapes, and sizes

Scientific classification

Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Asterids
Order:	Solanales
Family:	Solanaceae
Genus:	*Solanum*
Species:	***S. tuberosum***

Binomial name

Solanum tuberosum

L.

Wild potato species occur throughout the Americas, from the United States to Uruguay.[3] The potato was originally believed to have been domesticated independently in multiple locations,[4] but later genetic testing of the wide variety of cultivars and wild species proved a single origin for potatoes in the area of present-day southern Peru (from a species in the *Solanum brevicaule* complex), where they were domesticated 7,000–10,000 years ago.[5][6][7] Following centuries of selective breeding, there are now over a thousand different types of potatoes.[6] Of these subspecies, a variety that at one point grew in the Chiloé Archipelago (the potato's south-central Chilean sub-center of origin) left its germplasm on over 99% of the cultivated potatoes worldwide.[8][9]

Following the Spanish conquest of the Inca Empire, the Spanish introduced the potato to Europe in the second half of the 16th century. The staple was subsequently conveyed by European mariners to territories and ports throughout the world. The potato was slow to be adopted by distrustful European farmers, but soon enough it became an important food staple and field crop that played a major role in the European 19th century population boom.[7] However, lack of genetic diversity, due to the very limited number of varieties initially introduced, left the crop vulnerable to disease. In 1845, a plant disease known as late blight, caused by the fungus-like oomycete *Phytophthora infestans*, spread rapidly through the poorer communities of western Ireland, resulting in the crop failures that led to the Great Irish Famine. Thousands of varieties still persist in the Andes however, where over 100 cultivars might be found in a single valley, and a dozen or more might be maintained by a single agricultural household.[10] Besides the need of ensuring proper genetic diversity of a crop, it also underscores the need of depending on several staple crops, and to preferably choose staple crops that are endemic and thus adapted to the local environment.

The annual diet of an average global citizen in the first decade of the 21st century included about 33 kg (73 lb) of potato.[1] However, the local importance of potato is extremely variable and rapidly changing. It remains an essential crop in Europe (especially eastern and central Europe), where per capita production is still the highest in the world, but the most rapid expansion over the past few decades has occurred in southern and eastern Asia. China is now the world's largest potato-producing country, and nearly a third of the world's potatoes are harvested in China and India.[11]

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Etymology

The English word *potato* comes from Spanish *patata* (the name used in Spain). The Spanish Royal Academy says the Spanish word is a compound of the Taino *batata* (sweet potato) and the Quechua *papa* (potato).[12] The name potato originally referred to a type of sweet potato rather than the other way around, although there is actually no close relationship between the two plants. The English confused the two plants one for the other. In many of the chronicles detailing agriculture and plants, no distinction is made between the two.[13] The 16th-century English herbalist John Gerard used the terms "bastard potatoes" and "Virginia potatoes" for this species, and referred to sweet potatoes as "common potatoes".[14] Potatoes are occasionally referred to as "Irish potatoes" or "white potatoes" in the United States, to distinguish them from sweet potatoes.[14]

The name **spud** for a small potato comes from the digging of soil (or a hole) prior to the planting of potatoes. The word has an unknown origin and was originally (c. 1440) used as a term for a short knife or dagger, probably related to Dutch *spyd* and/or the Latin "spad-" root meaning "sword"; cf. Spanish "espada", English "spade" and "spadroon". The word spud traces back to the 16th century. It subsequently transferred over to a variety of digging tools. Around 1845 it transferred over to the tuber itself.[15] The origin of "spud" has erroneously been attributed to a 19th century activist group dedicated to keeping the potato out of Britain, calling itself The Society for the Prevention of an Unwholesome Diet.[15] It was Mario Pei's 1949 *The Story of Language* that can be blamed for the false origin. Pei writes, "the potato, for its part, was in disrepute some centuries ago. Some Englishmen who did not fancy potatoes formed a Society for the Prevention of Unwholesome Diet. The initials of the main words in this title gave rise to spud." Like most other pre-20th century acronymic origins, this one is false.[15]

Characteristics

Potato plants are herbaceous perennials that grow about 60 cm (24 in) high, depending on variety, the culms dying back after flowering. They bear white, pink, red, blue, or purple flowers with yellow stamens. In general, the tubers of varieties with white flowers have white skins, while those of varieties with colored flowers tend to have pinkish skins.[16] Potatoes are cross-pollinated mostly by insects, including bumblebees, which carry pollen from other potato plants, but a substantial amount of self-fertilizing occurs as well. Tubers form in response to decreasing day length, although this tendency has been minimized in commercial varieties.[17]

Flowers of a potato plant

After potato plants flower, some varieties produce small green fruits that resemble green cherry tomatoes, each containing up to 300 true seeds. Potato fruit contains large amounts of the toxic alkaloid solanine and is therefore unsuitable for consumption. All new potato varieties are grown from seeds, also called "true seed" or "botanical seed" to distinguish it from seed tubers. By finely chopping the fruit and soaking it in water, the seeds separate from the flesh by sinking to the bottom after about a day (the remnants of the fruit float). Any potato variety can also be propagated vegetatively by planting tubers, pieces of tubers, cut to include at least one or two eyes, or also by cuttings, a practice used in greenhouses for the production of healthy seed tubers. Some commercial potato varieties do not produce seeds at all (they bear imperfect flowers) and are propagated only from tuber pieces. Confusingly, these tubers or tuber pieces are called "seed potatoes".

Russet potatoes with sprouts

Potato plants

Genetics

There are about five thousand potato varieties worldwide. Three thousand of them are found in the Andes alone, mainly in Peru, Bolivia, Ecuador, Chile, and Colombia. They belong to eight or nine species, depending on the taxonomic school. Apart from the five thousand cultivated varieties, there are about 200 wild species and subspecies, many of which can be cross-bred with cultivated varieties, which has been done repeatedly to transfer resistances to certain pests and diseases from the gene pool of wild species to the gene pool of cultivated potato species. Genetically modified varieties have met public resistance in the United States and in the European Union.[18][19]

The major species grown worldwide is *Solanum tuberosum* (a tetraploid with 48 chromosomes), and modern varieties of this species are the most widely cultivated. There are also four diploid species (with 24 chromosomes): *S. stenotomum*, *S. phureja*, *S. goniocalyx*, and *S. ajanhuiri*. There are two triploid species (with 36 chromosomes): *S. chaucha* and *S. juzepczukii*. There is one pentaploid cultivated species (with 60 chromosomes): *S. curtilobum*. There are two major subspecies of *Solanum tuberosum*: *andigena*, or Andean; and *tuberosum*, or Chilean.[20] The Andean potato is adapted to the short-day conditions prevalent in the mountainous equatorial and tropical regions where it originated. The Chilean potato, native to the Chiloé Archipelago, is adapted to the long-day conditions prevalent in the higher latitude region of southern Chile.[21]

The International Potato Center, based in Lima, Peru, holds an ISO-accredited collection of potato germplasm.[22] The international Potato Genome Sequencing Consortium announced in 2009 that they had achieved a draft sequence of the potato genome.[23] The potato genome contains 12 chromosomes

and 860 million base pairs making it a medium-sized plant genome.[24] Above 99 percent of all current varieties of potatoes currently grown are direct descendants of a subspecies that once grew in the lowlands of south-central Chile.[25] Nonetheless, genetic testing of the wide variety of cultivars and wild species affirms that all potato subspecies derive from a single origin in the area of present-day southern Peru (from a species in the *Solanum brevicaule* complex).[5][6][7]

Most modern potatoes grown in North America arrived through European settlement and not independently from the South American sources. However, at least one wild potato species, *Solanum fendleri*, is found as far north as Texas and used in breeding for resistance to a nematode species that attacks cultivated potatoes. A secondary center of genetic variability of the potato is Mexico, where important wild species that have been used extensively in modern breeding are found, such as the hexaploid *Solanum demissum*, as a source of resistance to the devastating late blight disease. Another relative native to this region, *Solanum bulbocastanum*, has been used to genetically engineer the potato to resist potato blight.[26]

Potatoes yield abundantly with little effort, and adapt readily to diverse climates as long as the climate is cool and moist enough for the plants to gather sufficient water from the soil to form the starchy tubers. Potatoes do not keep very well in storage and are vulnerable to molds that feed on the stored tubers, quickly turning them rotten. By contrast, grain can be stored for several years without much risk of rotting.[27]

History

Peru

The potato originated in the region of southern Peru.[5] Potatoes were first domesticated in Peru between 8000 BC and 5000 BC.[6] In the Altiplano, potatoes provided the principal energy source for the Inca Empire, its predecessors, and its Spanish successor. In Peru above 10,000 feet altitude, tubers exposed to the cold night air turned into chuño; when kept in permanently frozen underground storehouses, chuño can be stored for years with no loss of nutritional value. The Spanish fed chuño to the silver miners who produced vast wealth in the 16th century for the Spanish government.[6]

Potato ceramic from the Moche culture, from the Larco Museum Collection.

Europe

Sailors returning from Peru to Spain with silver presumably brought maize and potatoes for their own food on the trip. Historians speculate that leftover tubers (and maize) were carried ashore and planted: "We think that the potato arrived some years before the end of the 16th century, by two different ports of entry: the first, logically, in Spain around 1570, and the second via the British isles between 1588 and 1593 ... we find traces of the transport of potatoes travelling from the Canaries to Antwerp in 1567 ... we can say that the potato was introduced there [the Canary islands] from South America around 1562 ... the first written mention of the potato [is] ... a receipt for delivery dated 28 november 1567 between Las Palmas in the Grand Canaries and Antwerp."[28] Basque fishermen from Spain used potatoes as ships' stores for their voyages across the Atlantic in the 16th century, and introduced the tuber to western Ireland, where they landed to dry their cod. In 1553, in the book *Crónica del Peru*, Pedro Cieza de Leon mentions he saw it in Quito, Popayán, and Pasto in 1538. The English privateer Francis Drake, returning from his circumnavigation, or Sir Walter Raleigh's employee Thomas Harriot[29] are commonly credited with introducing potatoes into England. In 1588, botanist Carolus Clusius made a painting of what he called "Papas Peruanorum" from a specimen in the Low Countries; in 1601 he reported that potatoes were in common use in northern Italy for animal fodder and for human consumption.[30]

The Spanish had an empire across Europe, and brought potatoes for their armies. Peasants along the way adopted the crop, which was less often pillaged by marauding armies than above-ground stores of grain. Across most of northern Europe, where open fields prevailed, potatoes were strictly confined to small garden plots because field agriculture was strictly governed by custom that prescribed seasonal rhythms for plowing, sowing, harvesting and grazing animals on fallow and stubble. This meant that potatoes were barred from large-scale cultivation because the rules allowed only grain to be planted in the open fields.[31] In France and Germany government officials and noble landowners promoted the rapid conversion of fallow land into potato fields after 1750. The potato thus became an important staple crop in northern Europe. Famines in the early 1770s contributed to its acceptance, as did government policies in several European countries and climate change during the Little Ice Age, when traditional crops in this region did not produce as reliably as before.[32][33] At times when and where most other crops failed, potatoes could still typically be relied upon to contribute adequately to food supplies during colder years.[34]

In France, at the end of the 16th century, the potato had been introduced to the Franche-Comté, the Vosges of Lorraine and Alsace. By the end of the 18th century it was written in the 1785 edition of *Bon Jardinier*: "There is no vegetable about which so much has been written and so much enthusiasm has been shown ... The poor should be quite content with this foodstuff."[35] It had widely replaced the turnip and rutabaga by the 19th century.[36]

19th century Europe

French physician Antoine Parmentier studied the potato intensely and in *Examen chymique des pommes de terres* (Paris, 1774) showed their enormous nutritional value. King Louis XVI and his court eagerly promoted the new crop, with Queen Marie Antoinette even wearing a headdress of potato flowers at a fancy dress ball. The annual potato crop of France soared to 21 million hectoliters in 1815 and 117 million in 1840, allowing a concomitant growth in population while avoiding the Malthusian trap. Although potatoes had become widely familiar in Russia by 1800, they were confined to garden plots until the grain failure in 1838–1839 persuaded peasants and landlords in central and northern Russia to devote their fallow fields to raising potatoes. Potatoes yielded from two to four times more calories per acre than grain did, and eventually came to dominate the food supply in eastern Europe. Boiled or baked potatoes were cheaper than rye bread, just as nutritious, and did not require a gristmill for grinding. On the other hand cash-oriented landlords realized that grain was much easier to ship, store and sell, so both grain and potatoes coexisted.[37]

Antoine Parmentier holding New World plants, François Dumont 1812

Throughout Europe, the most important new food in the 19th century was the potato, which had three major advantages over other foods for the consumer: its lower rate of spoilage, its bulk (which easily satisfied hunger), and its cheapness. The crop slowly spread across Europe, such that, for example, by 1845 it occupied one-third of Irish arable land. [citation needed] Potatoes comprised about 10% of the caloric intake of Europeans.[citation needed] Along with several other foods that either originated in the Americas or were successfully grown or harvested there, potatoes sustained European populations.[38]

In Britain, the potato promoted economic development by underpinning the Industrial Revolution in the 19th century. It served as a cheap source of calories and nutrients that was easy for urban workers to cultivate on small backyard plots. Potatoes became popular in the north of England, where coal was readily available, so a potato-driven population boom provided ample workers for the new factories. Marxist Friedrich Engels even declared that the potato was the equal of iron for its "historically revolutionary role.[30] The Dutch potato-starch industry grew rapidly in the 19th century, especially under the leadership of entrepreneur Willem Albert Scholten (1819–92).[39]

Ireland

In Ireland, the expansion of potato cultivation was due entirely to the landless laborers, renting tiny plots from landowners, who were interested only in raising cattle or in producing grain for market. A single acre of potatoes and the milk of a single cow was enough to feed a whole Irish family a monotonous but nutritionally adequate diet for a healthy, vigorous (and desperately poor) rural population. Often even poor families grew enough extra potatoes to feed a pig that they could sell for cash.[40]

A lack of genetic diversity from the low number of varieties left the crop vulnerable to disease. In 1845, a plant disease known as late blight, caused by the fungus-like oomycete *Phytophthora infestans*, spread rapidly through the poorer communities of western Ireland, resulting in the crop failures that led to the Great Irish Famine.[41]

The Lumper potato, widely cultivated in western and southern Ireland before and during the great famine, was bland, wet, and poorly resistant to the potato blight, but yielded large crops and usually provided adequate calories for peasants and laborers. Heavy dependence on this potato led to disaster when the potato blight quickly turned newly harvested potatoes into a putrid mush. The Irish Famine in the western and southern parts of the British-controlled island of Ireland, 1845–49, was a catastrophic failure in the food supply that led to approximately a million deaths from famine and (especially) diseases that attacked weakened bodies, and to massive emigration to Britain, the U.S., Canada and elsewhere.[42] During the famine years roughly one million Irish immigrated, this tide was not turned until the 20th century, when Ireland's population stood at less than half of the pre-famine level of 8 million.

Africa

It is generally believed that potatoes entered Africa with colonists, who consumed them as a vegetable rather than as a staple starch.[43] Shipping records from 1567 show that the first place outside of Central and South America where potatoes were grown were the Canary Islands.[44] As in other continents, despite its advantages as an anti-famine, high-elevation alternative to grain, potatoes were first resisted by local farmers who believed they were poisonous. Colonialists also promoted them as a low cost food and so it was a symbol of domination. In former European colonies of Africa, potatoes were initially consumed only occasionally, but increased production made them a staple in certain areas. Potatoes tended to become more popular in wartime due to them being able to be stored in the ground. In present day Africa they have become a vegetable or co-staple crop.[43]

Rwanda

In higher regions of Rwanda, potatoes have become a new staple food crop. Prior to the 1994 Rwandan genocide consumption was as high as 153 to 200 kg per year — higher than in any Western European country. Recently farmers have developed the potato as a cash crop after introducing several new varieties brought back by migrant laborers from Uganda and other varieties from Kenya.[43]

Asia

The potato diffused widely after 1600, becoming a major food resource in Europe and East Asia. Following its introduction into China toward the end of the Ming dynasty, the potato immediately became a delicacy of the imperial family. After the middle period of the Qianlong reign (1735–96), population increases and a subsequent need to increase grain yields coupled with greater peasant geographic mobility led to the rapid spread of potato cultivation throughout China, and it was acclimated to local natural conditions.

Boomgaard (2003) looks at the adoption of various root and tuber crops in Indonesia throughout the colonial period and examines the chronology and reasons for progressive adoption of foreign crops: sweet potato, Irish potato, bengkuang (yam beans), and cassava.

The potato was introduced in the Philippines during the late 16th century, and to Java and China during the 17th century. It was well established as a crop in India by the late 18th century and in Africa by the mid-20th century.[33]

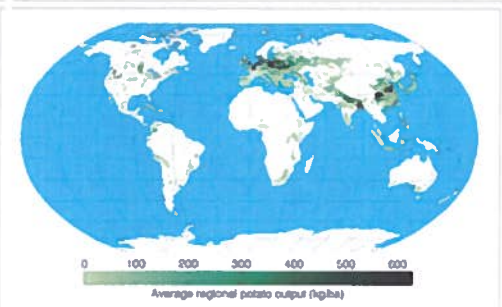
US and Canada

Potatoes were planted in Idaho as early as 1838; by 1900 the state's production exceeded a million bushels (about 27,000 tonnes[46]). Prior to 1910, the crops were stored in barns or root cellars, but, by the 1920s, potato cellars came into use. U.S. potato production has increased steadily; two-thirds of the crop comes from Idaho, Washington, Oregon, Colorado, and Maine, and potato growers have strengthened their position in both domestic and foreign markets.

Potato harvest in Idaho, circa 1920

By the 1960s, the Canadian Potato Research Centre in Fredericton, New Brunswick, was one of the top six potato research institutes in the world. Established in 1912 as a dominion experimental station, the station began in the 1930s to concentrate on breeding new varieties of disease-resistant potatoes. In the 1950s–1960s, the growth of the French fry industry in New Brunswick led to a focus on developing varieties for the industry. By the 1970s, the station's potato research was broader than ever before, but the station and its research programs had changed, as emphasis was placed on serving industry rather than potato farmers in general. Scientists at the station even began describing their work using engineering language rather than scientific prose.[47] Potatoes are Canada's most important vegetable crop; they are grown commercially in all its provinces, led by Prince Edward Island.[48]

Role in world food supply



Worldwide potato production

The United Nations FAO reports that the world production of potatoes in 2009 was 330 million tonnes.[49] Just over two thirds of the global production is eaten directly by humans with the rest being fed to animals or used to produce starch. This means that the annual diet of an average global citizen in the first decade of the 21st century included about 33 kg (or 73 lb) of potato.[1] However, the local importance of potato is extremely variable and rapidly changing. It remains an essential crop in Europe (especially eastern and central Europe), where per capita production is still the highest in the world, but the most rapid expansion over the past few decades has occurred in southern and eastern Asia. China is now the world's largest potato-producing country,

Top Potato Producers
in *2009*
(million metric tons)

People's Republic of China	73
India	34
Russia	31
Ukraine	20
United States	20
Germany	12
Poland	10
France	7
Netherlands	7
Belarus	7
World Total	**330**

and nearly a third of the world's potatoes are harvested in China and India.[11] The geographic shift of potato production has been away from wealthier countries toward lower-income areas of the world, although the degree of this trend is ambiguous.[50]

Source:

UN Food & Agriculture Organisation (FAO)[3] (http://faostat.fao.org/site/340/default.aspx)

In 2008, several international organizations highlighted the potato's role in world food production, in the face of developing economic problems. They cited its potential derived from its status as a cheap and plentiful crop that grows in a wide variety of climates and locales.[51] Due to perishability, only about 5% of the world's potato crop is traded internationally; its minimal presence in world financial markets contributed to its stable pricing during the 2007–2008 world food price crisis.[52][53] Thus, the United Nations officially declared 2008 as the *International Year of the Potato*,[54] to raise its profile in developing nations, calling the crop a "hidden treasure".[55] This followed the International Rice Year in 2004.

Nutrition

The potato contains vitamins and minerals, as well as an assortment of phytochemicals, such as carotenoids and natural phenols. Chlorogenic acid constitutes up to 90% of the potato tuber natural phenols. Others found in potatoes are 4-O-caffeoylquinic acid (crypto-chlorogenic acid), 5-O-caffeoylquinic (neo-chlorogenic acid), 3,4-dicaffeoylquinic and 3,5-dicaffeoylquinic acids.[56] A medium-size 150 g (5.3 oz) potato with the skin provides 27 mg of vitamin C (45% of the Daily Value (DV)), 620 mg of potassium (18% of DV), 0.2 mg vitamin B_6 (10% of DV) and trace amounts of thiamin, riboflavin, folate, niacin, magnesium, phosphorus, iron, and zinc. The fiber content of a potato with skin (2 g) is equivalent to that of many whole grain breads, pastas, and cereals.

Potato, raw, with skin

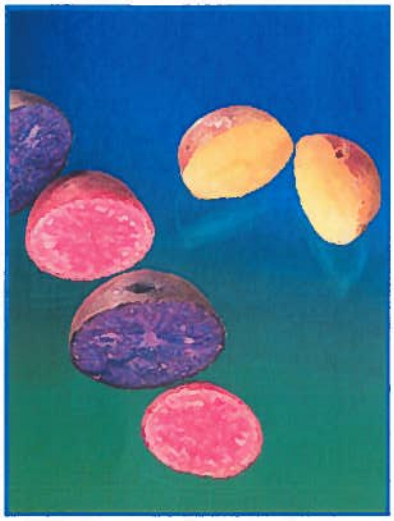
Nutritional value per 100 g (3.5 oz)	
Energy	321 kJ (77 kcal)
Carbohydrates	19 g
- Starch	15 g
- Dietary fiber	2.2 g
Fat	0.1 g
Protein	2 g
Water	75 g
Thiamine (vit. B_1)	0.08 mg (7%)
Riboflavin (vit. B_2)	0.03 mg (3%)
Niacin (vit. B_3)	1.1 mg (7%)
Vitamin B_6	0.25 mg (19%)
Vitamin C	20 mg (24%)
Calcium	12 mg (1%)
Iron	1.8 mg (14%)
Magnesium	23 mg (6%)
Phosphorus	57 mg (8%)
Potassium	421 mg (9%)
Sodium	6 mg (0%)

Percentages are relative to US recommendations for adults.

In terms of nutrition, the potato is best known for its carbohydrate content (approximately 26 grams in a medium potato). The predominant form of this carbohydrate is starch. A small but significant portion of this starch is resistant to digestion by enzymes in the stomach and small intestine, and so reaches the large intestine essentially intact. This resistant starch is considered to have similar physiological effects and health benefits as fiber: It provides bulk, offers protection against colon cancer, improves glucose tolerance and insulin sensitivity, lowers plasma cholesterol and triglyceride concentrations, increases satiety, and possibly even reduces fat storage.[57][58][59] The amount of resistant starch in potatoes depends much on preparation methods. Cooking and then cooling potatoes significantly increases resistant starch. For example, cooked potato starch contains about 7% resistant starch, which increases to about 13% upon cooling.[60]

The cooking method used can significantly impact the nutrient availability of the potato.

Colorful Potatoes Offer Nutrition, Variety



New ARS-developed potatoes with orange, red, or purple flesh could hit supermarkets in a few years. These potatoes are not just more colorful, they are more nutritious because they are high in antioxidants. **(K9640-1)**

Orange mashed potatoes? Purple french fries? Potato dishes of the future could be healthier, tastier, and more colorful if breeders incorporate diverse Andean potatoes.

"All potatoes originated in South America, but there are many variations that we don't typically see here in the United States," says ARS geneticist Charles R. Brown. "Potatoes with orange, red, or purple flesh may provide health benefits and new flavors," he says. Brown works at the ARS Vegetable and Forage Crops Production Research Unit in Prosser, Washington.

All potatoes are a good source of complex carbohydrates, potassium, vitamin C, folic acid, and iron. Brown has made dozens of breeding crosses to examine additional health benefits in colored varieties.

"The pigments that produce the colors may also function as antioxidants in the human diet," Brown says. Antioxidants are believed to aid in preventing certain cancers and types of blindness, as well as improving cardiovascular health.

These red and purple potatoes, shown here on a bed of spinach and kale, contain pigments that are high in antioxidants. **(K9641-1)**

Brown has developed orange-fleshed potatoes with up to four times the antioxidants zeaxanthin and lutein as white potatoes. In a blindfolded taste test of boiled, diced potatoes, consumers preferred the flavor of the orange potatoes to that of the white ones.

Consumers may already know of some red- or purple-fleshed potatoes, occasionally sold through organic cooperatives. But Brown has developed potatoes with these darker colors that have more than four times the antioxidant potential than current commercial varieties.

The potatoes also score well against other foods in a standard measure for antioxidant capacity, a laboratory test called ORAC, or oxygen radical absorbance capacity. (See "Can Foods Forestall Aging?" *Agricultural Research*, February 1999, pp. 14–17.) Brown's red- and purple-fleshed potatoes achieved ORAC scores comparable to brussels-sprouts, kale, or spinach.

Brown says that before the colored potatoes become available commercially, important agronomic traits need to be verified or incorporated, such as appealing skin appearance, reasonable yield and disease resistance, and low concentrations of bitterness compounds. Some of his experimental breeding lines may be ready for commercial testing once enough seed is available.

"There is tremendous interest from growers," Brown says. "These colored varieties are seen as a radically new type of potato for a previously untapped

market," he notes. "Americans love their potatoes. Giving them additional reasons to include potatoes in their diet is a plan that's likely to succeed."—By **Kathryn Barry Stelljes,** Agricultural Research Service Information Staff.

This research is part of Plant, Microbial, and Insect Genetic Resources, Genomics, and Genetic Improvement, an ARS National Program (#301) described on the World Wide Web at http://www.nps.ars.usda.gov.

Charles R. Brown is at the USDA-ARS Vegetable and Forage Crops Production Research Unit, 24106 N. Bunn Rd., Prosser, WA 99350-9687; phone (509) 786-9252, fax (509) 786-9277.

"Colorful Potatoes Offer Nutrition, Variety" was published in the **October 2001** issue of *Agricultural Research* magazine.

[Top]

Last Modified: 07/13/2011

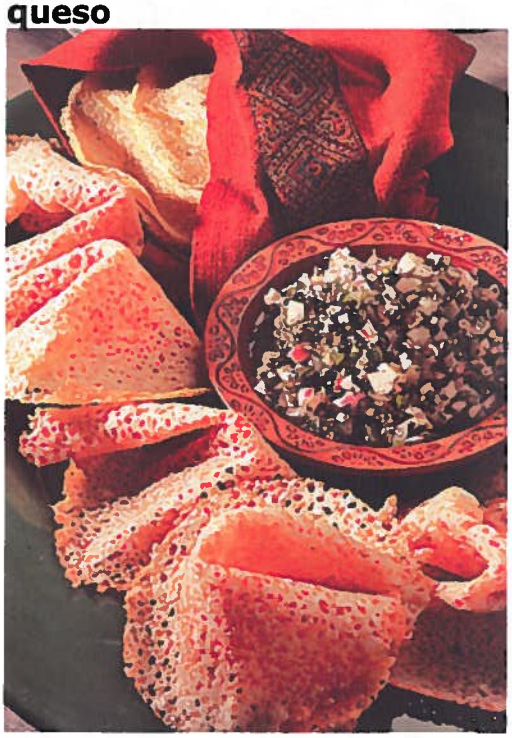
RSS Feed

Monday, April 05, 2010

April Harvest of the Month - Radishes!

You may think of radishes as being red on the outside and white on the inside but did you know there is a variety called a watermelon radish that is the opposite coloring with bright magenta flesh on the inside and a white outer skin? There are black and white radishes too.
Radishes are root vegetables similar to beets and turnips but are members of the cuciferae (mustard) family. They have been cultivated for thousands of years both in China and the Mediterranean area. They came to the Massachusetts colony in the early 1600s and are now grown all over the United States with California being one of the nation's primary producers. They are low in calories and high in Vitamin C, folate and potassium and are a good source of magnesium. Radishes will be on the salad bar on Fridays in April.

Recipe: Radish salsa and tortillas with chicharrones de queso



SAVORY: Chicharrones de queso with tomatillo-radish salsa and tortillas. (Glenn

Recent Postings

Lunch is IN When School is OUT

Harvest of the Month for May: Strawberries

April Cilantro:Sage Mountain & Tierra Miguel Farms

March Harvest of the Month - Broccoli

February is American Heart Month

February Harvest of the Month: Local Winter Squash

First Lady's Let's Move Campaign Spurs Creativity

January Harvest of the Month - Local Tangerines

December Harvest of the Month - Local Spring Mix

Nutrition Ed at its Finest at Horton Elementary!

Postings by Month

June 2011

May 2011

April 2011

March 2011

February 2011

January 2011

December 2010

November 2010

September 2010

August 2010

May 2010

April 2010

Koenig / Los Angeles Times)
Total Time: 1 hour
Servings: 6
Note: The chicharrones de queso are adapted from Jimmy Shaw, chef-owner of Lotería Grill, who serves them with warm tortillas, guacamole and salsa verde. Make the salsa one day ahead to allow the flavors to blend. You will have blend. You will have extra salsa; save the remainder for another use.

5 tomatillos, peeled of their husks and finely diced (about 1 1/2 cups)
1 cucumber (not English), peeled, seeded and finely diced (about 1 cup)
1 small bunch radishes, trimmed and finely diced (about 1 cup)
1 bunch cilantro, stems removed and minced (about 1/2 packed cup)
1/2 large red onion, finely diced (about 1 cup)
2 jalapeños, seeded and finely diced
Zest and juice of 2 large limes
2 tablespoons olive oil
1/4 teaspoon cayenne pepper
2 teaspoons salt
12 corn tortillas
1 pound Monterrey Jack cheese, coarsely grated with a box grater (about 3 cups)

1. *Make the salsa*: In a large bowl, combine the tomatillos, cucumber, radishes, cilantro, red onion, jalapeños, lime zest and juice, olive oil, cayenne pepper and salt. Toss to combine, then transfer to a nonreactive container, cover and refrigerate overnight.

2. *Warm the tortillas*. Heat the oven to 350 degrees. Wrap the tortillas in a damp towel and place the towel on a baking sheet. Heat the tortillas just until warmed through.

3. *Heat an 8- to 9-inch* diameter nonstick skillet over medium-low heat. Scatter one-half cup grated cheese in a circle, about 7 inches in diameter. As the cheese melts, spread it evenly across the pan so it cooks evenly, spreading the cheese further out to the edges of the pan as it melts. Rotate the pan as needed so the cheese cooks evenly. Once the cheese starts to crisp on the bottom and lightly color on the top, 6 to 7 minutes, blot dry and continue cooking until golden brown, another minute or two.

4. *Using a plastic* spatula, remove the cheese from the pan. Immediately form the cheese into a cone or drape it over a rolling pin, using a spatula and being careful, as the cheese is quite hot. It will cool very quickly, becoming crunchy and keeping whatever shape you form it into. Cool on paper towels and repeat until all of the cheese has been used. Serve the chicharrónes with the warm tortillas and a bowl of salsa.

Each serving: 431 calories; 22 grams protein; 27 grams carbohydrates; 4 grams fiber; 27 grams fat; 15 grams saturated fat; 67 mg. cholesterol; 821 mg. sodium.
Recipe from the LA Times

Posted by Kimberly Wright at 8:00 AM

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0 Approved Comment(s)

Romanesco

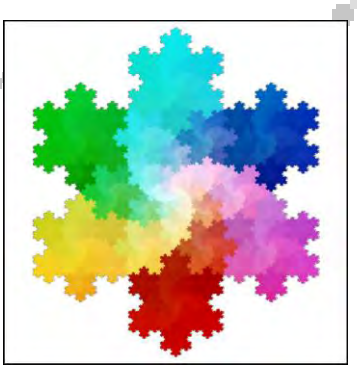
The Fractal Food

What is a fractal?

A fractal is a shape that can be split into parts.

Each part is a smaller copy of the whole.

Each part of a Romanesco is exactly alike when it is whole or in fractions of itself! Another example of a fractal is a snowflake. If a whole snowflake breaks apart, there will be several smaller identical snowflakes floating around!



The Romanesco is from Italy. It is a cross between cauliflower and broccoli. Italians call it Broccoli Romanesco. The French call it Cauliflower Romanesco.

Does it taste more like cauliflower or broccoli?

You be the judge!

RUTABAGAS--AN UNCOMMON TREAT

Includes Recipe Below

Rutabagas are often thought of as yellow turnips but actually bear the botanical name *Brassica napus* and belong to the highly prized family of cruciferous vegetables. The rutabaga, a relatively newcomer in the world of vegetables, is thought to have evolved from a cross between a wild cabbage and a turnip. The earliest records of rutabaga's existence are from the seventeenth century in Southern Europe where they were first eaten as well as used for animal fodder. It's curious that throughout history animals were often fed the healthiest foods, foods thought to be inappropriate for human consumption.

Because rutabagas thrive best in colder climates, they became popular in Scandinavia, but especially in Sweden, the country that earned them the name "swedes." In Europe, rutabagas are still called swedes. In America, rutabagas were first cultivated in the northern parts of the country in the early 1800s. Canada and the northern states are today's greatest producers of the rutabaga.

The rutabaga is a root vegetable that looks very much like a turnip with yellow-orange flesh and ridges at its neck. Although this beta carotene-rich vegetable has been grown and marketed in our country for nearly 200 years, it remains an uncommon food in American dining. It's actually a great tasting vegetable with a delicate sweetness and flavor that hints of the light freshness of cabbage and turnip. With its easy preparation and versatility, great nutrition, and excellent flavor, the rutabaga can easily become an endearing family favorite.

Because rutabagas store so well, up to one month in the refrigerator and up to four months in commercial storage at 32 degrees, they are available year round. Planted in May and June, they're harvested in late summer and early fall when their flavor is at its peak. Ideally, it's best to shop for fresh rutabagas at farmer's markets in early autumn.

Rutabaga Nutrition

100 grams or 3 1/2 ounces

Nutrient	Cooked	Raw
Calories	39	36
Protein	1.3 g	1.2 g
Total Fat	.6 g	.6 g
% Calories from fat	5.1%	5.0%
Carbohydrates	8.7 g	8.1 g
Fiber	1.8 g	2.5 g
Calcium	48.0 mg	47.0 mg
Copper	.04 mg	.04 mg
Iron	53 mg	.52 mg
Magnesium	23.0 mg	23.0 mg
Manganese	.17 mg	.17 mg
Phosphorous	.57 mg	.58 mg
Potassium	326.0 mg	337.0 mg
Selenium	.7 mg	.7 mg
Sodium	20.0 mg	20.0 mg
Zinc	.350 mg	.340 mg
Vitamin A	561.0 IU	580.0 IU
Vitamin B1 Thiamine	.082 mg	.090 mg
Vitamin B2 Riboflavin	.041 mg	.040 mg
Vitamin B3 Niacin	.72 mg	.7 mg
Vitamin B6 Pyridoxine	.102 mg	.100 mg
Vitamin C	18.8 mg	25.0 mg
Vitamin E	.15 mg	.30 mg
Folate (folic acid)	.15 mcg	.21 mcg
Pantothenic Acid	.155 mg	.160 mg
Saturated Fat	.03 g	.03 g
Monounsaturated Fat	.07 g	.07 g
Polyunsaturated Fat	.04 g	.04 g

Preparing Rutabagas

There are at least 100 ways to enjoy rutabagas. Here are a just few suggestions to introduce this wonderful vegetable:

RAW: First, peel them with a vegetable peeler. Slice and enjoy as a snack. Chop, dice, or grate them and add to salads. Create a unique salad with diced rutabagas and other vegetables of your choice. Grate them and add to cole slaw. Grate and combine with carrot salad.

COOKED: Rutabagas can be roasted, boiled, steamed, stir-fried, mashed, or stewed. Cook them with potatoes and mash together. Quarter them and roast along with potatoes. Enhance the flavor of stews with chopped or quartered rutabagas. Dice them and add to soups. Stir-fry with onions.

Today's busy lifestyle often makes us seek out healthy recipes that fall into that easy-to-prepare category. Here's a rutabaga winner.

RUTABAGAS IN THE ROUGH

4 large rutabagas
1/4 t. salt
Water
1 T. extra-virgin olive oil
Dash of nutmeg
Salt and pepper to taste

1. Peel rutabagas with a vegetable peeler, and cut into chunks. Put them into a 4-quart (4 liter) saucepan, add the salt and about 2" (5 cm) of water to cover. Cover saucepan, and bring to a boil over high heat.
2. Turn heat down to medium and cook about 12 - 15 minutes, or until fork tender. Drain, reserving cooking liquid. Using a potato masher, coarsely mash rutabagas in the saucepan, adding cooking liquid as needed for moisture.
3. Add olive oil and nutmeg. Season to taste with salt and pepper. Transfer to a serving bowl, sprinkle with a dash of nutmeg, and garnish with a sprig of fresh sage or herb of your choice. Serves 6.

Snow Peas

Snow peas (or China mangetout) are sweet, meaty, crisp and tender. Usually found in Oriental cuisine, these peas are enjoying increasing demand by supermarkets and restaurants.

Ethnic/Cultural Information:

Snow peas are entirely edible, thus the French name *mange-tout*, meaning "eat it all".

Geography/History:

Evidence of peas have been found at a Stone Age lake village in Switzerland, revealing peas were among the earliest of all cultivated plants. California and Washington State are major producers of snow peas.

Source: www.specialtyproduce.com

Facts

- Over 53 percent of seven to nine year olds picked strawberries as their favorite fruit.
- Eight strawberries will provide 140 percent of the recommended daily intake of Vitamin C for kids.
- Native forms of strawberries adapt to various climates and are indigenous to every major continent except Africa, Australia and New Zealand.
- The fruit size of the very early strawberries was very small.
- Seventy per cent of a strawberry's roots are located in the top three inches of soil.
- Strawberries are the first fruit to ripen in the spring.
- One cup of strawberries is only 55 calories.
- There is a museum in Belgium just for strawberries.
- Strawberries are a member of the rose family.
- The flavor of a strawberry is influenced by weather, the variety and stage of ripeness when harvested.
- On average, there are 200 seeds in a strawberry.
- Ninety-four per cent of United States households consume strawberries.
- According to the United States Department of Agriculture, the annual per capita consumption of fresh and frozen strawberries is 4.85 pounds.
- Strawberries are grown in every state in the United States and every province of Canada.
- California produces 75 percent of the nation's strawberry crops. According to the California Strawberry Advisory Board, California strawberries are available January through November, with peak quality and supply from March to May.
- If all the strawberries produced in California in one year were laid berry to berry, they would go around the world 15 times.
- California produces an amazing one billion pounds of strawberries each year.

- Each acre of land in California in strawberry production produces an average of 21 tons of strawberries annually.
- 23,000 acres of strawberries are planted in California each year.
- Lebanon, Oregon's annual strawberry festival is home to the world's largest strawberry shortcake.
- Americans eat 3.4 pounds of fresh strawberries each year plus another 1.8 pounds frozen per capita. Although strawberries are available in many forms—frozen, jam and jelly, and ice cream— nothing compares to the taste of a fresh vine ripened strawberry.
- Strawberries are delicate, requiring gentle handling to prevent bruising. With today's shipping technology, strawberries are available year round, but at a cost. Commercial growers have produced resilient hybrid berries known for their shipping quality.
- Florida is second in production. The Florida season runs from December to May and peaks during March and April. To meet the demand, winter strawberries are usually imported between November and May.

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Harvest of the Month

Network for a Healthy California

The *Harvest of the Month* featured fruit is

strawberries

Health and Nutrition Go Hand-in-Hand

Eating a variety of colorful fruits and vegetables and getting daily physical activity can help your family stay healthy, feel good, and may lower the risk of serious health problems like obesity, type 2 diabetes, heart disease, and certain types of cancer.

Eight large strawberries are equal to about one cup of fruit. One cup of strawberries is an excellent source of vitamin C, which helps the body heal cuts and wounds and helps lower the risk of infection. One cup of strawberries is also a source of fiber, which helps you feel full, keep normal blood sugar levels, and avoid constipation.

Healthy Serving Ideas

Microwave sliced strawberries with a small amount of orange juice or unsweetened applesauce to make a great topping for your pancakes.

Blend strawberries, orange juice, and lowfat yogurt for a refreshing smoothie.

Toss strawberry halves with melon, pineapple, and mango chunks and sprinkle with lime juice and chili powder for a Mexican fruit salad.†

Shopper's Tips

- Look for plump berries with a natural shine, rich red color, bright green caps, and a sweet smell.
- Store strawberries in the refrigerator for up to three days.
- Do not wash strawberries until you are ready to eat them.

Let's Get Physical!

Add bicycling to your travel plans by riding to the store for small purchases, riding to work, or taking a ride with your family on the weekends.

How Much Do I Need?

The amount of fruits and vegetables you need depends on your age, gender, and the amount of physical activity you get every day.

Eat a variety of colorful fruits and vegetables with all your meals and snacks throughout the day to reach your total daily needs!

Recommended Daily Amount of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day. Visit *www.mypyramid.gov* to learn more.

For more recipes and tips, visit:
www.cachampionsforchange.net
www.calstrawberry.com

† Photography courtesy of the California Strawberry Commission.

This material was produced by the California Department of Public Health, *Network for a Healthy California,* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © Copyright California Department of Public Health 2009.

Nutrition information per serving of one medium sweet potato:

Calories: 130
Calories from fat: 0.39 g
Protein: 2.15 g
Carbohydrate: 31.56 g
Dietary Fiber: 3.9 g
Sodium: 16.9 mg
Potassium: 265.2 mg
Calcium: 28.6 mg
Folate: 18.2 mcg
Vitamin C: 29.51 mg
Vitamin A: 26081.9 IU
Source: National Agricultural Library (NAL),
part of the Agricultural Research Service of the US Department of Agriculture.

- The Center for Public Interest (CSPI) ranks the sweet potato as one of the most nutritious vegetables. The sweet potato is also an important source of vitamin B6, iron, potassium and fiber.
- Sweet potatoes contain virtually no fat and are low in sodium.
- Sweet potatoes stand out from nuts and avocados as a source of vitamin E because they are fat free. Most vitamin E-rich foods are fatty, such as vegetable oils.
- Sweet potatoes help to promote a healthy digestive tract. They are also a substantial source of dietary fiber, especially when eaten with the skin. There is more fiber in one sweet potato than in a bowl of oatmeal.
- Fiber may also lower your risk of colon cancer, says Peter Greenwald, MD, director of the Division of Cancer Prevention and Control of the National Cancer Institute. Experts believe that fiber may increase bulk in the colon, thereby "diluting" possible cancer promoting substances (carcinogens) that are found in food or formed during digestion.
- Sweet potatoes, or yams, actually fit perfectly into a low-carb lifestyle—with major nutritional bonuses to boot.
- The sweet potato is a complex carbohydrate that provides twice the recommended daily allowance of vitamin A and more than one-third of the requirements for vitamin C.
- Vitamin A in sweet potatoes is necessary for strong tissues and is required to maintain a healthy immune system function and develop resistance to infection. It also protects the body from cardiovascular disease and lowers the risk of stroke.
- The National Cancer Institute recommends that people eat at least five servings of fruit and vegetables a day, especially vegetables that are rich in vitamins A and C (like sweet potatoes).

- Vegetables and fruits contain more than 100 beneficial vitamins, minerals, fibers and other substances, including phytochemicals (chemical compounds such as carotenoids, flavonoids, terpenes, sterols, indoles and phenols, created by plants).
- Vitamin C has been associated with an increase in blood levels of "good" cholesterol, which lowers the risk of heart disease, and a decrease in the levels of "bad" cholesterol, which raises the risk.
- Some fruits and vegetables are rich in soluble fiber, notably pectin, which helps lower total and LDL ("bad") cholesterol. These include apples, citrus fruit, berries, carrots, apricots, prunes, cabbage, sweet potatoes, and Brussels sprouts. If you eat at least five servings a day, you'll see an extra drop in your cholesterol level beyond the effect of a low-fat diet. UC Berkeley Wellness Letter January 2001
- Stroke is less common among vegetable eaters, possibly because of the vegetables' potassium. Source: Nutrition Action Health Letter, December 1996
- As the body ages, it often requires fewer calories, while at the same time needing to maintain or possibly even increase its vitamin and mineral requirements. Source: AARP Webplace
- Approximately 51 million Americans, more than one-quarter of all adults and one in five children, are obese. The tendency toward obesity is fostered by our environment: lack of physical activity combined with high-calorie, low-cost foods. Source: American Obesity Association
- Obesity is the second leading cause of unnecessary deaths. Each year, obesity causes at least 300,000 excess deaths in the U.S., and healthcare costs of American adults with obesity amount to approximately $100 billion. Source: American Obesity Association
- Losing weight requires physical activity and healthy eating for life. Eating right doesn't mean completely giving up cookies and cake. It just means eating them in moderation while including more nutrient-rich foods and low-fat meals in your diet.
- Low-fat foods must contain less than three grams of fat per serving. Light foods must contain one-third fewer calories than the regular version contains. But beware: fat-free and low-fat does not necessarily mean low calorie. Fat-free foods often contain high amounts of added sugar or sodium to make up for the flavor that is lost when the fat is cut.
- In 2004, nearly 12 million Americans are counting carbohydrates as part of the South Beach and Atkins diet plans. Sweet potatoes are introduced in the later phases of these diets as an acceptable food because they are nutrient-rich. Sweet potatoes rank significantly lower than white potatoes in the glycemic index, which explains why both carb-counting diets encourage substituting yams for Idaho potatoes.
- The Atkins Diet recommends introducing 10 grams of carbs in Phase 3 of the diet plan. Sweet potatoes have 10 grams of carbohydrates for every 1/4 cup. Sweet potatoes are on the safe list as a great substitute for other starches such as rice, potatoes and corn.
- Carb counters must constantly contend with a pesky detail called the glycemic index (GI). High GI foods raise blood sugar quickly - then the individual crashes, feels hungry, if not famished, and the eating cycle begins. Low GI foods cause a gradual rise in blood sugar and make one feel satiated longer. For the carbohydrates among these foods, they've taken on the nomenclature of "good" and "bad" carbs. Asparagus—good carb. White potatoes—bad carb. But all potatoes are not created equal. Among root vegetables, sweet potatoes offer the lowest GI rating. That's because the sweet potato digests slowly, causing a gradual rise in blood sugar. It's time to move sweet potatoes to the "good" carb list. Many of the most popular diets these days have already.
- Potassium in sweet potatoes helps maintain fluid and electrolyte balance in the body cells, as well as normal heart function, nerve function and blood pressure. Source: Encyclopedia of Nutritional Supplements.
- Infant malnutrition is a serious problem in many developing countries. A national health and demographic survey found that over 25 percent of children under the age of five suffer from chronic malnutrition. The International Potato Center (CIP) believes there is a good potential for improving the diet, and thereby a child's nutritional status, by incorporating sweet potatoes into the diet. Source: Development of a Sweet Potato-Based Weaning Food for Poorly Nourished Children Six Months to Three Years Old, CIP Program Report 1997-98.
- Folate in sweet potatoes helps reduce homocysteine levels, a chemical capable of destroying the circulatory system and causing heart attacks. Heart disease is the #1 cause of death in humans and claims nearly one million American lives annually.

Sweet Potatoes

Fact Sheet

Where did they come from?

Sweet potatoes are native of Central and South America where they served as a staple for the Aztecs in Mexico and the Incas in Peru. Sweet potato remains have been found in caves in Peru, which date back 10,000 to 20,000 years. Christopher Columbus was the first to introduce sweet potatoes to Europe while later explorers introduced sweet potatoes to Asia. They were also a main source of nourishment for early colonial Americans and for soldiers during the Revolutionary War.

Where do they grow?

North Carolina, Louisiana, California, Georgia and New Jersey are the major states for growing sweet potatoes. The major suppliers of sweet potatoes include China, Indonesia, Vietnam and Uganda.

How do they grow?

Sweet potatoes are tropical tubers and are part of the Morning Glory Family. They grow underground just as a carrot and, therefore, are considered to be storage roots. Sweet potatoes generally grow the size of a regular white potato and contain a smooth, thin skin. They are available all year long, but are most abundant in the fall and early winter.

Are they healthy?

- Contain calcium, potassium, vitamins A, B6 and C
- Contain virtually no fat and are sodium free
- Good source of dietary fiber
- Rated as #1 most nutritional vegetable by the “Center for Science in the Public Interest” (CSPI)

How do you pick a good one?

- Choose those with a firm, dark, smooth skin
- Avoid sweet potatoes with wrinkled skins
- Do not choose those with bruises, sprouts or decayed spots

☺ FUN FACTS! ☺

Sweet Potatoes

Did you know…

☺ **Did you know a serving of sweet potatoes contains 327% of your daily need for vitamin A? (More than any other vegetable!)**

☺ **Did you know that sweet potatoes and yams are not the same?**
(Yams come from the Yam family and are tubers, like potatoes, while sweet potatoes are considered storage roots, like carrots. Yams also have rough, scaly skin while sweet potatoes have a smooth, thin skin. Yams can grow as long as 7 feet and can weigh up to 150 pounds while sweet potatoes are usually the size of a regular potato. Yams are primarily grown in the Caribbean while sweet potatoes grow in the U.S. Yams do not contain any vitamin A while sweet potatoes are super rich in this vitamin.)

☺ **Did you know that there are two varieties of sweet potatoes, pale yellow with a dry flesh and dark orange with a moist flesh?**

☺ **Did you know that the orange fleshed sweet potato is the primary one sold in the U.S.?**

☺ **Did you know you can eat sweet potatoes raw with dip?**
(They taste like a sweet carrot. They are a super healthy snack!)

☺ **Did you know you can eat sweet potato fries?**
(Much healthier than the common white potato French fry!)

☺ **Did you know you can also eat baked sweet potatoes?**

☺ **Did you know that when you eat a sweet potato you are actually eating a root?**

☺ **Did you know that ½ cup of sweet potatoes provides 1 serving from the vegetable group of the Food Guide Pyramid?**

☺ **Did you know that sweet potatoes are one of the most nutritious vegetables you can eat as part of your 5 a Day?**

☺ **Did you know sweet potatoes should not be refrigerated?**
(If refrigerated, they will develop a hard core and a bad taste. Store in a cool, dry place with temperatures between 55º-60º F.)

Remember … Include 5 - 9 servings of fruits and vegetables per day!

School Food Service Link.....

Quick Steps to 5 - 9 servings of fruits and vegetables per day at school…

Listed below are suggestions that you may choose at your own discretion

DOD (Department of Defense) Special:

- ✓ Raw Sweet Potatoes Sticks available from DOD
- ✓ Call Leslie Bowen to place orders: 1-800-795-3523

Presentation
Meal Appeal ------
Package Food in Clear Plastic;
Styrofoam Hides the Food!

RECIPES:

- ✓ Try a new recipe with sweet potatoes ---
  Sweet Potato-Plum Bread Squares (USDA B-18)
  Sweet Potato Pie (USDA C-17)
  Baked Sweet Potatoes and Apples (USDA I-7)
  Orange Glazed Sweet Potatoes (USDA I-13)
  Southern Sweet Potato Salad (see attached)
- ✓ Offer candied sweet potatoes
- ✓ Offer raw sweet potato sticks with low fat dip
- ✓ Serve baked sweet potato fries with ketchup or cinnamon sugar
- ✓ Feature a baked sweet potato instead of a white baked --- much heathier!
- ✓ Offer sweet potato pancakes for breakfast or lunch
- ✓ Serve "Two Tone Potatoes" --- Add 1 part mashed sweet potatoes to 4 parts white mashed *(Adds color and an exciting flavor!)*

MARKETING:

- ✓ Contact the North Carolina SweetPotato Commission for ideas and resources:
  Phone: 919-989-7323 **www.ncsweetpotatoes.com**
- ✓ Advertise and highlight the fruit or vegetable of the month on your menu
- ✓ Refer to "Fruits & Vegetables Galore" Kit *(Meal Appeal Manual)* page 9

Quality:
Do Not Refrigerate
Sweet Potatoes;
Store in Cool, Dry
Room at°55°-60°F

PROMOTIONS:

- ✓ Promote a "Sticker Day" with prizes on featured fruit/vegetable menu day,
  Give this menu a special name *(Example: Sweet Potato--- Super Power!)*
- ✓ Feature "Orange Day" on the day that you offer sweet potato on your menu
  - ✓ Encourage the entire school to get involved
  - ✓ Reward students with a small prize if they are wearing orange
- ✓ Celebrate Sweet Potato Month, February, with a different recipe each week!
  - ✓ Order "Spencer Sweetpotato" dolls to give away.
    (Available from the North Carolina SweetPotato Commission)
  - ✓ Feature a "Guess How Many Sweet Potatoes Are in the Pile" contest
    ("Guessing" posters are available from the North Carolina SweetPotato Commission)
- ✓ Refer to "Fruits & Vegetables Galore" Kit *(Meal Appeal Manual)* pages 16-31

Safety:
Sanitize
Cutting Boards
After Each Task!!

School Food Service Link.....

School Food Service Recipes

Southern Sweet Potato Salad

Serving Size: **1/2 cup**
Yield: **25 servings**
1 serving=1/2 cup Fruit/Veg.

Ingredients:

4 lbs. Sweet Potatoes (Fresh), Peeled and Cut into ½ inch cubes
¼ cup Lemon Juice
2 cups Mayonnaise
¼ cup Orange Juice
2 tablespoons Honey
2 teaspoons Grated Orange Peel
1 teaspoon Ground Ginger
½ teaspoon Salt
¼ teaspoon Ground Nutmeg
2 cups Sliced Celery
2/3 cup Chopped Dates

Directions:

Ina a saucepan, cook sweet potatoes in boiling water just until tender, about 5-8 minutes (do not overcook). Drain; toss with the lemon juice. In a large bowl, combine mayonnaise, orange juice, honey, orange peel, ginger, salt and nutmeg. Add the warm potatoes, celery and dates. Toss to coat well. Cover and chill.

Tangelo

Tangelo

A tangelo fruit (Cushman Honeybells)

Scientific classification

(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Rosids
Order:	Sapindales
Family:	Rutaceae
Genus:	*Citrus*
Species:	***C.* × *tangelo***

Binomial name

Citrus* × *tangelo

J.W. Ingram & H.E. Moore, 1975.

For other uses, see Tangelo (disambiguation).

The **tangelo** (/ˈtændʒəloʊ/ *TAN-jə-loh*; *C. reticulata* × *C. maxima* or *C.* × *paradisi*), *Citrus* × *tangelo*, is also widely known as the **honeybell**. Tangelo is a citrus fruit that is a hybrid of a tangerine and either a pomelo or a grapefruit. The fruits are the size of an adult fist and have a tangerine taste, but are very juicy, to the point of not providing much flesh but producing excellent and plentiful juice. Tangelos generally have loose skin and are easier to peel than oranges.[1] They are easily distinguished from oranges by a characteristic knob at the top of the fruit.

Contents

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- 1 Varieties of tangelos
  - 1.1 Orlando tangelo
  - 1.2 Minneola
- 2 Drug interactions
- 3 See also
- 4 References
- 5 External links

Varieties of tangelos

Orlando tangelo

This early maturing tangelo is noted for its juiciness, mild and sweet flavor, and flat-round shape with a characteristic knob and large size. California/Arizona tangelos have a slightly pebbled texture, good interior and exterior color, very few seeds, and a tight-fitting rind. Orlando tangelos are available from mid-November to the beginning of February. It originated as a cross between a Duncan grapefruit and a Dancy tangerine. W. T. Swingle of the United States Department of Agriculture (USDA) is credited with creating the hybrid in 1911. When the Orlando tangelo was first cultivated, it was known by the name Lake tangelo. The trees of this variety grow to a large size and are easily recognized by their cup-shape leaves. Orlando tangelos are recognized as being one of the more cold-tolerant varieties.

Minneola

The Minneola tangelo (sometimes misspelled "Mineola") is a cross between a Duncan grapefruit and a Dancy tangerine, and was released in 1931 by the USDA Horticultural Research Station in Orlando. It is named after Minneola, Florida. Most Minneola tangelos are characterized by a stem-end neck, which tends to make the fruit appear bell-shaped. Because of this, it is called the **Honeybell** in the gift fruit trade, where it is one of the most popular varieties, but the proper name is Minneola. The fruit is usually fairly large, typically 9 - 9½ inches in circumference. The peel color, when mature, is a bright-reddish-orange color. The peel is relatively thin, so the fruit

peels easily. It is quite juicy. The Minneola is not strongly self-fruitful, and yields will be greater when interplanted with suitable pollenizers such as Temple tangor, Sunburst tangerine, or possibly Fallglo tangerine. It tends to bear a good crop every other year.[citation needed] The fruit matures in the December-February period, with January being the peak.

Drug interactions

One study so far has shown that, unlike grapefruit, interactions with statins are not likely with tangelos, even though it is derived from a grapefruit crossed with a tangerine. It seems that the furocoumarins in grapefruit are not expressed in tangelos, so some reactions are temporary

cherry tomatoes

Cherry Tomato Seasonal Availability in NH: July - September

Storage & Prep Tips

- Tomatoes that are allowed to ripen fully on the vine will have the fullest, best flavor.
- For best flavor, do not refrigerate tomatoes. The cool temperatures of the refrigerator will diminish their flavor, and change their texture.
- Store cherry tomatoes at room temperature, and eat within a few days.
- If tomatoes are picked under-ripe, a quick way to encourage them to ripen up is to place them inside a paper bag for a couple of days.
- Tomatoes with a green blush will ripen. Avoid cherry tomatoes that are that are soft, wrinkled, or have broken skin or blotchy brown areas.

Nutrition Info

- Tomatoes are a great source of vitamin C, vitamin A, and the antioxidant lycopene.
- Cooked tomatoes contain even more lycopene than raw tomatoes because cooking breaks down cell walls, releasing and concentrating carotenoids like lycopene.

Fun Facts

- Tomatoes are native to South America but spread to Mexico, where European explorers came across the fruit in the late 1400s or 1500s and took some back home with them, introducing them to Europe.
- Tomatoes need a dark location to ripen. They will ripen much faster in the dark than on the windowsill.

There are 10,000 varieties of tomatoes grown by farmers and gardeners around the world.

Cherry Tomato Corn Salad

1/4 cup minced fresh basil
3 Tbsp olive oil
2 tsp lime juice
1 tsp sugar
1/2 tsp salt
1/4 tsp pepper
2 cups cooked corn, cut off the cob
2 cups cherry tomatoes, halved
1 cup chopped seeded peeled cucumber

In a jar with a tight-fitting lid, combine the basil, oil, lime juice, sugar, salt and pepper; shake well. In a large bowl, combine the corn, tomatoes and cucumber. Drizzle with dressing and toss to coat. Refrigerate until serving.

Super Simple Cherry Tomato Salad

In a serving bowl, combine cherry tomatoes, soft mozzarella cheese (cut into cubes), and fresh parsley (chopped finely). Sprinkle with olive oil. Salt & pepper to taste.

Oven-Dried Cherry Tomatoes

2 to 3 pints cherry tomatoes
1 to 2 tsp salt

Preheat oven to 200 degrees F. Line a large baking sheet with aluminum foil. Cut the tomatoes in half and arrange them cut side up on the baking sheet (they can be placed close together, or even touching). Sprinkle well with salt. Bake in the center of the oven for 2 to 3 hours. Serve hot, at room temperature, or cold. They will shrink to about three-quarters of their original size. They will become a deep red color and have an intense real-tomato taste. They make a great topping for pizza, or can be added to salads or pasta dishes.

Get Smart Eat Local
New Hampshire Farm to School PROGRAM
www.nhfarmtoschool.org

For more information about
NH Farm to School, visit our website
www.nhfarmtoschool.org

Pear Tomato

Pear Tomato is the common name for any one in a group of indeterminate heirloom tomatoes. It originated in Europe in the 1700s. There are yellow, orange, and red varieties of this tomato; the yellow variety being most common. They are generally sweet, and are in the shape of a pear, but smaller.

Pear tomatoes are commonly eaten raw, but can also be used as a garnish, as an ingredient in many different dishes and sauces, or in drinks.

History

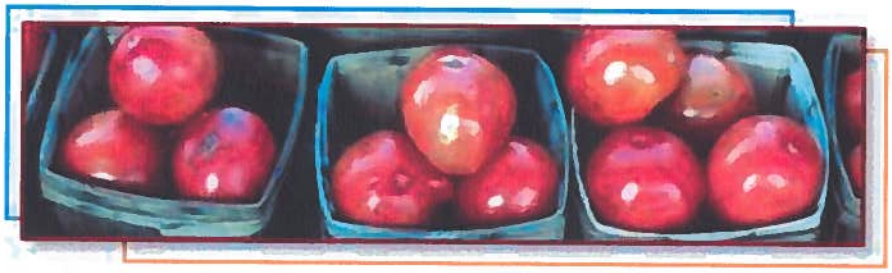
The pear tomato originated in Europe in the 1700s. Within the next century both England and the United States were introduced to the fruit. In 1752 records show the English using it for flavoring soups.

The first recorded yellow pear tomatoes were grown in Europe in 1805. In 1825 the Hudson's Bay Company, Fort Vancouver, once the headquarters of the fur trade in the Northwest, operated a seven-acre farm filled with flowers, herbs, vegetables, and fruits, among which was the yellow pear tomato.

In 1847 three varieties of tomato, including the pear tomato, were grown for the table in the United States. In 1863 seedsman Joseph Ellis offered over a hundred varies of tomato seeds for sale in Utah and Denver, including those of the yellow pear tomato. In 1889 George Thomas & Co. sold pear tomatoes.

Fruit & Vegetable of the Month

Vegetable of the Month: Tomato



Currently, tomatoes are one of the most popular vegetables eaten by Americans. Tomatoes are members of the fruit family, but they are served and prepared as a vegetable. This is why most people consider them a vegetable and not a fruit. Tomatoes are an excellent source of vitamin C and a good source of vitamin A.

Varieties

There are thousands of tomato varieties. The most widely available varieties are classified in three groups: cherry, plum, and slicing tomatoes. A new sweet variety like the cherry tomato is the grape tomato, really wonderful to eat alone or in a salad.

How To Select

Cold temperatures damage tomatoes, so never buy tomatoes that are stored in a cold area. Choose plump tomatoes with smooth skins that are free from bruises, cracks, or blemishes. Depending on the variety, ripe tomatoes should be completely red or reddish-orange.

Storage

Store tomatoes at room temperature (above 55 degrees) until they have fully ripened. This will allow them to ripen properly and develop good flavor and aroma. Try to store tomatoes out of direct sunlight, because sunlight will cause them to ripen unevenly. If you must store them for a longer period of time, place them in the refrigerator. Serve them at room temperature. Chopped tomatoes can be frozen for use in sauces or other cooked dishes.

Tomato

Serving Size 1/2 cup, cubed (90g)

Amounts Per Serving	% Daily Value
Calories 20	
Calories from Fat 5	
Total Fat 0g	0%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 10mg	0%
Total Carbohydrate 4g	1%
Dietary Fiber 1g	4%
Sugars 3g	
Protein 1g	
Vitamin A	10%
Vitamin C	40%
Calcium	0%
Iron	2%

*** Percent Daily Values are based on a 2,000 calorie diet.**

Recipes

Gazpacho
Makes 6 servings.

Ingredients

6 large tomatoes
1 large cucumber, peeled, seeded and finely diced
1 large green bell pepper, finely chopped
1 medium-sized red onion, minced
3 Tbsp. red wine vinegar
2 Tbsp. olive oil
Juice of 1/2 lemon
2 to 3 Tbsp. fresh parsley, chopped (to taste)
2 Tbsp. fresh basil, chopped or 2 tsp. dried basil
Salt and fresh ground pepper to taste
Tabasco sauce to taste

To peel the tomatoes, submerge them in boiling water for 15 seconds. Place into a colander and rinse under cold water. The skins should slip right off. Core the tomatoes and gently squeeze out the seeds. Chop half of the tomatoes coarsely and puree the other half in a food processor. Combine the puree and chopped tomatoes in a large mixing bowl. Blend the remaining ingredients with the tomatoes. Cover and refrigerate for several hours before serving. Serve chilled; garnish with herbed croutons if desired. This is an official Fruits & Veggies—More Matters Recipe.

Nutritional analysis per serving: Calories 99, Fat 5g, Cholesterol 0mg, Fiber 3g, Sodium 20mg.

Find more in our recipe database!

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Ugli Fruit: Nutrition . Selection . Storage

Nutrition information for ugli fruit and tips on how to select, store and prepare it. Health Benefits

[All Fruits] [All Vegetables]

Did You Know...

Despite its unattractive, bumpy appearance, the ugli fruit has a delicious citrus sweet taste that kids will love. This fruit is native to Jamaica.

How to Select
Ugli fruit should be heavy for its size and have no signs of drying at the ends. Fruit should give with slight pressure. Small dents are normal and color should not be considered when choosing.

How to Store
Store ugli fruit at room temperature for up to 5 days. Can store in refrigerator for up to 2 weeks.

Nutrition Benefits
Ugli fruits is fat-free, cholesterol-free. Excellent source of vitamin C and fiber.

Fruit Nutrition Database
Vegetable Nutrition Database

You may also be interested in...

How to Read a Food Label
Key Nutrients Found in Fruits & Veggies
Dietary Guidelines for Americans
Fruit & Vegetable Recipe Search

Nutrition Facts

Serving Size (122g)
Servings Per Container

Amount Per Serving

Calories 45	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 11g	4%
Dietary Fiber 2g	8%
Sugars 8g	
Protein 1g	

Vitamin A 0% • Vitamin C 70%

Calcium 2% • Iron 0%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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Health Benefits of Fruits & Vegetables

The natural antioxidants in fruits and vegetables will help keep your body working at its best, so consuming a diet that meets your daily recommended amount of fruits and vegetables is one of the best ways to give your body a strong defense against disease. Fruits and vegetables are protective to health as they're helpful at **reducing the risk**

Watermelon Nutrition Facts

High Fructose Corn Syrup www.SweetSurprise.com/
How Much do you Know About High Fructose Corn Syrup? Find Out Here.

12 Brain Boosting Foods www.doctorshealthpress.com
Learn how to increase your mental health with brain charging foods.

1 Trick to Relieve Joints www.Instaflex.com
See How You Can Relieve Your Joints With This Fast and Easy Trick!

Fibromyalgia Facts DenverFibroCare.com
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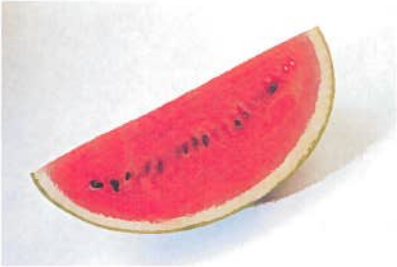

Watermelon is not only great on a hot summer day, this delectable thirst-quencher may also help quench the inflammation that contributes to conditions like asthma, arteriosclerosis, diabetes, colon cancer, and arthritis. It's being touted as so healthful it should be stored in your medicine chest. DietPower.com has declared watermelon one of "The 10 Best Foods."

Sweet, juicy watermelon is packed with some of the most important antioxidants in nature. It is an excellent source of vitamin C, and is also a very good source of vitamin A, notably through its concentration of beta-carotene. These powerful antioxidants travel through the body neutralizing free radicals.

Free radicals are substances in the body that can cause a great deal of damage. They are able to oxidize cholesterol, making it stick to blood vessel walls, where it can lead to heart attack or stroke. They can add to the severity of asthma attacks by causing airways to clamp down and close. They can increase the inflammation that occurs in osteoarthritis and rheumatoid arthritis and cause most of the joint damage that occurs in these conditions, and they can damage cells lining the colon, turning them into cancer cells. Fortunately, vitamin C and beta-carotene are very good at getting rid of these harmful molecules and can therefore prevent the damage they would

otherwise cause. As a matter of fact, high intakes of vitamin C and beta-carotene have been shown in a number of scientific studies to reduce the risk of heart disease, reduce the airway spasm that occurs in asthma, reduce the risk of colon cancer, and alleviate some of the symptoms of osteoarthritis and rheumatoid arthritis. A cup of watermelon provides 24.3% of the RDA for vitamin C, and, through its beta-carotene, 11.1% of the RDA for vitamin A.

Watermelon is also a very concentrated source of the carotenoid lycopene. Recent research shows watermelon contains more lycopene than any other fresh fruit or vegetable, even tomatoes. Lycopene is well known for its ability to lower the risk of many different kinds of cancer, especially cancers of the prostate, lung, and stomach. Data are also suggestive of a benefit for cancers of the pancreas, colon and rectum, esophagus, oral cavity, breast, and cervix.

Watermelon is also a very good source of vitamin B6 and a good source of vitamin B1, potassium and magnesium.

A watermelon's delectable flesh has no cholesterol and virtually no fat (almost none of which is saturated) — a stellar accomplishment for a food often served as a dessert at picnics. A whole cup of watermelon contains only 48 calories.

Once you have the melon home, it will keep at room temperature for two to three weeks. After you've cut into it, however, it needs to go in the fridge.

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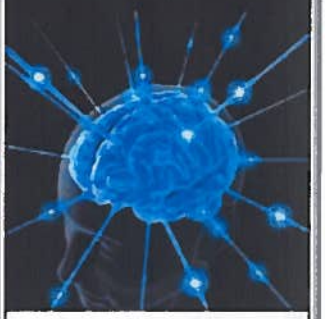

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Network for a Healthy California

Harvest of the Month®

October

Health and Learning Success Go Hand-in-Hand

National School Lunch Week takes place the second week of October. Children who eat school meals usually like and eat more fruits and vegetables. Studies show that students who eat more fruits and vegetables and get regular physical activity often perform better in the classroom. Encourage eating school meals and help put your child on the road to health and learning success.

The **Harvest of the Month** featured produce is **winter squash**

Produce Tips

- Squash are members of the gourd family. Winter squash have hard shells, inedible skins and large seeds.
- Some varieties include pumpkin, butternut, acorn, spaghetti, banana, kabocha and turban squash.
- Choose squash that are firm, heavy for their size and have dull skins (not shiny). Winter squash should be hard without cracks or soft spots.
- Store uncut winter squash in a dark, cool, dry place (about 50–60 F). They can keep up to three months.
- Once cut, squash can keep about one week when wrapped and refrigerated.
- Thin-skinned varieties, like acorn or butternut, can be peeled with paring knife or vegetable peeler.
- Thicker-skinned varieties, like turban, may require a heavy knife to split open.

ROASTED BUTTERNUT SQUASH

Ingredients:
(Makes 4 servings at ¾ cup each)

2 pounds butternut squash
1 tablespoon vegetable oil
1 teaspoon thyme
1 teaspoon sage
1 teaspoon salt
Nonstick cooking spray

1. Preheat oven to 425 F.
2. Peel squash with vegetable peeler and cut in half lengthwise. Remove seeds and cut squash into cubes.
3. In a bowl, toss squash with oil and seasonings until well coated.
4. Spray a cookie sheet or roasting pan with nonstick cooking spray and spread squash cubes in a single layer.
5. Bake for 45 minutes or until tender.
6. Serve warm.

Source: *Network for a Healthy California*, 2008.

Let's Get Physical!

- Be a role model. Studies show that children who see their parents having fun and being active are more likely to stay active their entire lives.
- Instead of a coffee break, take a brisk 10 minute walk. Encourage your child to be active at recess.
- Enjoy a bike ride with your child.
- Find a local pumpkin farm and take a family walk through the fields. Talk about how pumpkins grow.

For new ideas, visit:
www.kidtribe.com

Nutrition Facts

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

Amount per Serving	
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%	Calcium 5%
Vitamin C 33%	Iron 5%

Source: *www.nutritiondata.com*

Helping Your Child Eat Healthy

- Bake, boil, steam, sauté or microwave winter squash. Use it in stews, soups, salads, dips, breads and even pies.
- Sample different varieties of winter squash to find out your family's favorite. (See Produce Tips for varieties.)
- Varieties with darker yellow/orange flesh are more nutritious than lighter colors. (Hint: Butternut is more nutritious than spaghetti squash.)
- Add winter squash to your family's favorite soup or casserole. Ask your child to help you make it.

For more ideas, visit:
www.cachampionsforchange.net

How Much Do I Need?

A serving of cooked winter squash is about one cup cubed. This may be too much for most children. 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

*If you are active, eat the higher number of cups per day. Visit ***www.mypyramid.gov*** to learn more.

CHAMPIONS for CHANGE
Network for a Healthy California

This material was funded by USDA's Food Stamp Program through the California Department of Public Health's *Network for a Healthy California*. These institutions are equal opportunity providers and employers. The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. For information on the Food Stamp Program, call 1-888-328-3483. © Copyright California Department of Public Health 2007.

Harvest of the Month®

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Studies continue to show a connection between physical activity and classroom performance, including improved results on state reading and math exams! Even short activity breaks during the day can improve students' cognitive performance and classroom behavior. *Harvest of the Month* focuses on improving students' health and well-being by increasing their fruit and vegetable consumption and daily physical activity. Help your students achieve these behavior changes so they can achieve more in the classroom!

Source: *Active Education,* Active Living Research, **www.activelivingresearch.org**

Exploring California Zucchini: Taste Testing

Getting Started:

- Partner with your school nutrition staff or a local retailer to get zucchini samples.
- Review *Taste Testing Tips* in the Educators' Corner of **www.harvestofthemonth.com**.
- Make arrangements to cook (steam) the zucchini in advance.

What You Will Need (per group):

- 1 raw, whole zucchini and 1 cooked, sliced zucchini
- Paring knives and cutting boards
- Printed Nutrition Facts labels for zucchini*

Activity:

- Explore look, feel, and smell of raw and cooked zucchini. Record observations.
- Make a drawing of raw zucchini and label parts (stem, end, skin). Make drawing of inside of cooked zucchini and label parts (flesh, seeds).
- Slice raw zucchini and taste; record observations. Repeat for cooked zucchini.
- Review Nutrition Facts label for raw zucchini. Hypothesize what happens to the nutrient values when zucchini is cooked. Research the nutrient information for cooked (boiled) zucchini.
- Survey classroom to find out if students preferred raw or cooked zucchini. Share results with school nutrition staff.

*Download from the Educators' Corner of **www.harvestofthemonth.com**.

For more ideas, reference:

School Foodservice Guide – Successful Implementation Models for Increased Fruit and Vegetable Consumption, Produce for Better Health Foundation, 2005, pp. 39-42.

Nutrition Facts

Serving Size: ½ cup zucchini, sliced (57g)

Calories 9 — Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 6mg	0%
Total Carbohydrate 2g	1%
Dietary Fiber 1g	2%
Sugars 1g	
Protein 1g	

Vitamin A 2% — Calcium 1%
Vitamin C 16% — Iron 1%

ZUCCHINI

Cooking in Class: Vegetable Kabobs & Dip

Ingredients:

Makes 32 tastes at 1 stick each

- 8 raw zucchini, sliced
- 8 raw yellow squash, sliced
- 4 tomatoes, cut into eighths
- 32 mushrooms, whole
- 2 cups lowfat vegetable dip
- 16 wooden kabob sticks, halved
- Serving tray and napkins

1. Place zucchini, squash, tomatoes, and mushrooms on sticks, alternating colors.

2. Arrange on a tray and drizzle with vegetable dip. Serve with napkins.

Source: *Network for a Healthy California,* 2009.

For more recipes, visit:
www.cachampionsforchange.net

Reasons to Eat Zucchini

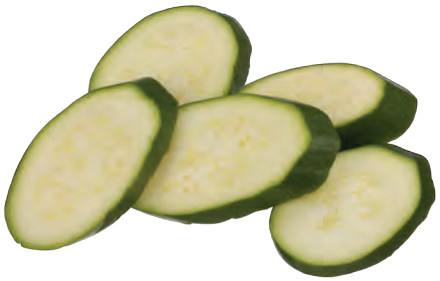
A ½ cup of sliced zucchini is:

- A good source of vitamin C.
- A source of manganese, potassium, and vitamin B_6.

Champion sources of vitamin C:*

- Grapes
- Green beans
- Melons
- Peppers
- Swiss chard
- Tomatoes

*Provide a good or excellent source of vitamin C.



What is Manganese?

- Manganese is an essential mineral involved in the formation of bone.
- It also plays a role in specific reactions related to amino acid, cholesterol, and carbohydrate metabolism.
- Manganese is a micronutrient or trace element, meaning this element is present in the body in small amounts.
- Interactions among minerals may occur as a result of diet. These interactions can be helpful or competitive. For example, high levels of manganese can affect iron metabolism.
- Manganese is essential for normal skeletal and connective tissue development.
- It is involved in the syntheses of fatty acids and cholesterol and the excretion of nitrogen from our bodies.
- Dietary sources include: nuts, whole grains, legumes, green leafy vegetables, dried fruits, fresh fruits, and non-leafy vegetables.

For more information, visit:
Dietary Reference Intakes, Institute of Medicine, 2006.
http://www.eatright.org/ada/files/Eat_Your_Way_to_Better_Health.pdf

How Much Do I Need?

A ½ cup of sliced zucchini is about one cupped handful. The amount of fruits and vegetables you need depends on your age, gender, and physical activity level. All forms of fruits and vegetables count toward your total daily needs – fresh, frozen, cooked, dried, and 100% juice!

Remind students to eat a variety of colorful fruits and vegetables throughout the day and to get at least 60 minutes of physical activity every day.

Recommended Daily Amounts of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.
Visit **www.mypyramid.gov** to learn more.

Botanical Facts

Pronunciation: zū-ˈkē-nē
Spanish name: calabacita
Family: Cucurbitaceae
Genus: *Cucurbita*
Species: *Cucurbita pepo*

Zucchini is a member of the Cucurbitaceae (Cucurbit) family, which includes melons, pumpkins, cucumbers, and gourds. Zucchini is a type of "summer squash," which are eaten when they are still immature, small, and have a soft rind. Summer squash are completely edible—skin, seeds, flesh—whether raw or cooked.

In the culinary world, squash, including zucchini, are referred to as vegetables since they are commonly eaten this way. Botanically speaking, zucchini is the immature fruit, or swollen ovary of the female zucchini flower. Zucchini grows on bushy, non-vining plants with large, dark green, mature leaves that have silver-gray splotches and streaks. The plants are *monoecious,* producing male and female flowers on the same plant.

For more information, visit:
http://ag.arizona.edu/maricopa/garden/html/pubs/0403/zucchini.html

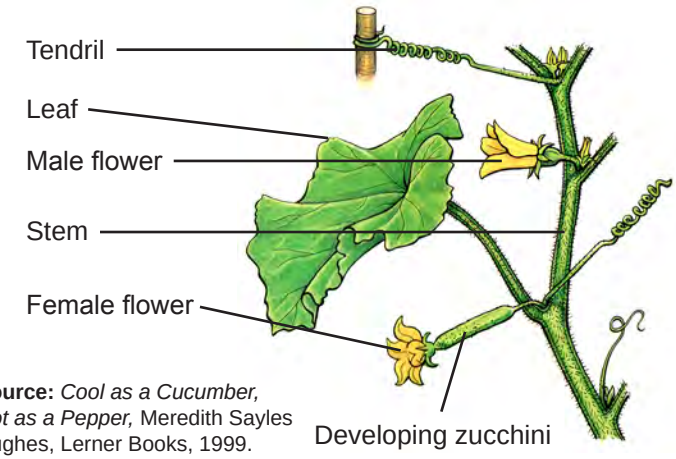
How Does Zucchini Grow?

Zucchini is a warm-season crop that can grow easily in temperate climates and nearly all regions of California. It is a short-season crop compared to other Cucurbit fruits, such as melons and cucumbers. The plants can withstand temperatures up to 100 degrees and do not grow well below 60 degrees.

During the growing season, the ratio of male to female flowers on a plant is at least three to one. Only the female flowers can bear fruit and honeybees are the primary pollinators. The fruit grows from the base of the female flower on a short stem. Once fruit is set, zucchini can grow up to 1 inch per day.

For a chart with information about how to plant and grow zucchinis, refer to *Zucchini Botanical Images* (in the Educators' Corner) on **www.harvestofthemonth.com**.

For more information, visit:
http://www.ipmcenters.org/CropProfiles/docs/casquash.pdf
http://anrcatalog.ucdavis.edu/pdf/7245.pdf



Source: *Cool as a Cucumber, Hot as a Pepper,* Meredith Sayles Hughes, Lerner Books, 1999.

School Garden: Growing Time

How to Get Your Garden Growing

Does your school have a garden? Do you want to start one? There are many benefits of having a school garden, including:

- Extending science lessons from the classroom.
- Incorporating health and nutrition education messages.
- Increasing students' knowledge and preferences for fruits and vegetables.
- Getting physical activity by working in the garden.

Helpful Hint:

If you want to learn how to start your own school garden, request a free copy of *Gardens for Learning* from the California School Garden Network. Visit **www.csgn.org/join.php** to submit a request.

Bring Nutrition Education to the Garden

Use your school garden for a nutrition education activity.

- Have students research the nutrition information for each produce item in the garden.
- Have students make their own signs to look like Nutrition Facts labels. List nutrients that meet the good or excellent sources requirements.*
- Make additional signs with "Serving Tips" on how to prepare and serve the fruit or vegetable.
- Affix signs to 6-8" sticks and stake in the garden bed.
- Conduct a garden scavenger hunt where students search for the produce with the greatest sources of vitamin A, vitamin C, fiber, calcium, and iron.

*Good sources provide 10-19% of the Daily Value. Excellent sources provide at least 20% of Daily Value.

For more ideas, visit:

www.lifelab.org

Student Sleuths

1. Define micronutrients and describe their role in the human body. Create a grid with food sources for micronutrients.
2. Zucchini is commonly known as a vegetable. However, it is actually a fruit of the Cucurbit family. What other fruits are in the Cucurbit family? Why is zucchini botanically a fruit? Make a list of other "fruits" we call vegetables.
3. Zucchini is a type of summer squash. Unlike their counterpart winter squash, summer squash are eaten when they are still immature and small. Make a chart comparing summer squash and winter squash, including size, color, shell, skin, flesh, seeds, how they grow, and at what stage they are harvested.

For information, visit:

www.fruitsandveggiesmatter.gov/month/squash.html
http://ucanr.org/freepubs/docs/7245.pdf
http://hort-devel-nwrec.hort.oregonstate.edu/zuc.html

Student Advocates

The National Farmers' Market Week occurs annually in August. Encourage students to get involved and support their local growers.

- Make posters and signs to promote the dates, times, and locations of local farmers' markets.
- Distribute signage to local stores and post in high-traffic community areas (e.g., bus stops, parks, bulletin boards).
- Organize a neighborhood walk to a local farmers' market. It provides safety and students can assist elderly community members with their groceries.
- Contact the organizer of the farmers' market. Ask if your classroom, school, or district can have tent space to promote *Harvest of the Month*.
- Distribute *Harvest of the Month* family and community newsletters at the farmers' market.

Alternative: Students can help organize a school or community beautification day. Refer to *Physical Activity Corner* (on page 4) for information.

For more ideas, visit:

www.ams.usda.gov/farmersmarkets

Home Grown Facts

- California ranks third in the nation for winter and summer squash production, producing 17% of the nation's supply.
- Zucchini is the most common summer squash variety.
- California acreage for production of winter squash more than doubles the acreage for summer squash. However, annual production of summer squash surpasses winter squash.

2007 Data

Activity:

Using information from *How Does Zucchini Grow?* (page 2), hypothesize where zucchini grows best in California. Draw a map and study the geography and climate that supports zucchini growth.

For more information, visit:

http://www.ipmcenters.org/CropProfiles/docs/casquash.pdf
www.cdfa.ca.gov

A Slice of Zucchini History

- The Native Americans introduced squash to European settlers as one of the "Three Sisters" – three indigenous plants used for agriculture: maize (corn), beans, and squash.
- While most squash varieties were brought from America to Europe, zucchini originated in Italy as a result of spontaneously occurring mutations.
- Zucchini arrived in California with Italian immigrants in the 1920s.

For more information, visit:

www.urbanext.uiuc.edu
http://aggie-horticulture.tamu.edu/plantanswers/

Adventurous Activities

Zucchini Math

- The ratio of male to female flowers on a squash plant is 3:1. What is a ratio? Look around and make a list of other ratios in the classroom.
- Find a recipe using zucchini. Reduce recipe by half and/or double it. What happens to the nutrient values? List nutrients that are good or excellent sources.
- Using the same recipe, determine how many servings are needed to feed your entire class and do the math to alter the recipe.

Helpful Hints:

- Good sources provide 10-19% of the Daily Value.
- Excellent sources provide at least 20% of the Daily Value.

Adapted from: www.healthylausd.net

Cafeteria Connections

Get your school's cafeteria involved in *Harvest of the Month*. Here are some tips to get started:

- Share results of students' preferences for raw or cooked zucchini (from taste testing activity). Ask if the cafeteria can feature the preferred variety in a meal or snack.
- Provide zucchini Nutrition Facts labels (raw and cooked) to display in the cafeteria.*
- Have students make posters, draw botanical images, or write poems about zucchini. Display in the cafeteria.
- Provide a list of healthy serving ideas for zucchini. Volunteer your class to help prepare a meal or snack featuring zucchini.
- Share a list of local farmers' markets near your school. Encourage school nutrition staff to connect with a grower to order produce.
- Invite school nutrition staff to help in the school garden.

*Download from the Educators' Corner of **www.harvestofthemonth.com**.

Activities & Resources Galore

Visit the Educators' Corner online for more resources:

- Cooking in Class (recipe analyses, cooking tips)
- Reasons to Eat (Nutrition Glossary)
- How Does It Grow (botanical images, growing tips)
- Student Sleuths (Answer Key)
- Adventurous Activities
- Literature Links (book lists)
- Links to California Content Standards (all grades)

All available at www.harvestofthemonth.com.

Physical Activity Corner

Students need a safe and clean place to be physically active all year long. During summer, play areas and fields may become dirty, dried out, vandalized, or not usable. Organize a school-wide beautification day (or week) to make the environment a clean, safe place for students to play.

- Coordinate with the school principal and other classrooms.
- Choose a date for the project.
- Make a list of which areas to beautify.
- Enlist parent and community volunteers to help.
- Get clean-up supplies.
- Talk to local nurseries and retail stores for donations of soil, plants, and athletic equipment.

Helpful Hint:

Everyone who participates in the project will also get great physical activity while working!

For more ideas, visit:
www.keepcaliforniabeautiful.com/education.html

Just the Facts

- Zucchini is usually dark green, but can also be light green, yellow, multi-colored, or striped.
- Zucchini is the most common variety of summer squash. Other varieties include: pattypan squash, crookneck squash, sunburst squash, yellow squash, chayote squash, and opo squash.
- When green summer squash started growing in the Mediterranean, Italians called it "zucchini" and the French called it "courgette." Both names mean "small squash."
- In Great Britain, zucchini is referred to as "vegetable marrow."

For more information, visit:
http://anrcatalog.ucdavis.edu/pdf/7245.pdf
www.localharvest.org/zucchini.jsp

Literature Links

The Cucurbit family includes some of the featured *Harvest of the Month* produce items. Schedule a trip to the school library and have a brief discussion about the Cucurbit family. Then, let students choose a book to read about their favorite Cucurbit member – or the fruit or vegetable of another vine family.

This material was produced by the California Department of Public Health, *Network for a Healthy California,* with funding from the USDA Supplemental Nutrition Assistance Program (formerly the Food Stamp Program). These institutions are equal opportunity providers and employers. In California, food stamps provide assistance to low-income households, and can help buy nutritious foods for better health. For food stamp information, call 877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © California Department of Public Health 2009.

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