

# Harvest of the Month®



Growing Healthy Students



## Nutrition Facts

Serving Size: 1 cup, halves (152g)

Calories 49

Calories from Fat 4

	% Daily Value
Total Fat 0g	1%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 12g	4%
Dietary Fiber 3g	12%
Sugars 7g	
Protein 1g	
Vitamin A 0% Vitamin C 149% Calcium 2% Iron 4%	

Source: [www.nutritiondata.com](http://www.nutritiondata.com)

STRAWBERRY | May

## Health and Learning Success Go Hand-in-Hand

With Standardized Testing and Reporting taking place in classrooms, it is more important than ever for students to eat nutritious meals and get daily physical activity. Research demonstrates improved cognitive development, academic performance and behavior with proper nutrition and regular activity, especially among low-income students. **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 Strawberries

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:

- Strawberries, ranging in size from small, medium and large
- Enough berries to provide students with a taste of each size
- Paper and colored pencils

#### Activity:

- Make three columns on a sheet of paper
- Taste the large strawberries and note in the first column the color, texture, sound, smell and flavor
- Repeat with the medium and small berries, noting characteristics in the second and third columns
- Compare and contrast the similarities and differences
- Determine which size strawberry was the sweetest
- Discuss what may affect the taste and size (variety, sun, water, etc.)

#### For more ideas, reference:

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

### Reasons to Eat Strawberries

#### One cup (about eight large berries) provides:

- More than 140 percent of the recommended Daily Value for Vitamin C.
- Three grams of fiber, making it a good source of carbohydrates.
- As much potassium as half of a large banana.
- Antioxidants and many essential minerals including calcium and iron.



### May Events

- National Strawberry Month
- National Physical Fitness and Sports Month
- National Salad Month

### Cooking in Class:

#### Strawberry Smoothie

Ingredients (Makes 32 tastes at 1/4 cup each)

- 3 (8-ounce) containers lowfat vanilla yogurt
- 3 (12-ounce) packages frozen strawberries, partially thawed
- 1 1/2 cups orange juice
- Blender
- Paper cups

Combine half of the ingredients in a blender to make the first batch. Blend 15 to 30 seconds or until smooth. Repeat with the remaining ingredients for second batch.



Source: *Discover the Secret to Healthy Living*, Public Health Institute, 2001.

#### For more ideas, reference:

*Kids Cook Farm-Fresh Food*, CDE, 2002.

## How Do Strawberries Grow?

Strawberries grow on small, low growing perennials (plants that survive more than one growing season) that prefer well-drained, sandy soil and are native to temperate and mountainous tropical regions. To produce the best crop the plants need plenty of water, warm days and cool nights.

Many varieties of strawberry plants produce stolons that spread out from the base and take root to form new plants. The plants produce white or pink flowers. After flowering, strawberry plants require pollination by bees or other insects in order to produce fruit. Factors such as cool or wet weather, which discourages bee activity, have a damaging affect on fruit production. Growing conditions and weather also affect the time required to produce fruit. On average it takes about 30 days for flowers to develop into fruit. The first crop can be harvested the year following planting.

There are three basic types of strawberry plants:

- **June-bearing plants** produce a single crop each year, usually lasting three to five weeks in July.
- **Day-neutral plants** produce fruit the same year in which they are planted and can produce berries throughout their year-long growing season since they are not dependent on day length to produce flower buds.
- **Everbearing plants** produce fruit twice per year, usually in late June to early July and again in late August. Because they produce few berries, they are rarely used for commercial production.

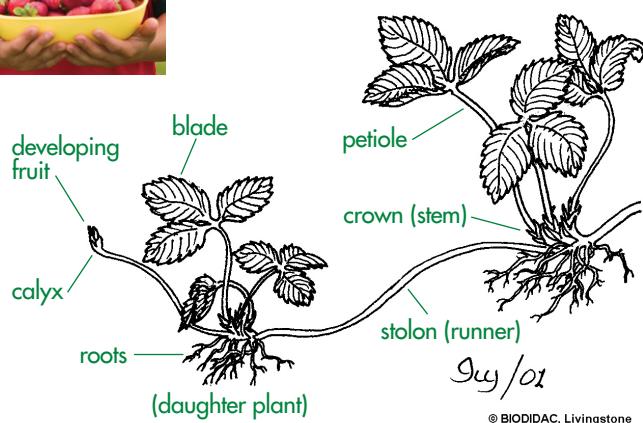
While strawberry plants can survive and produce fruit for many years, commercial strawberry plants are replaced every two to four years, depending on the type of strawberry.

Because strawberries are delicate, they are picked by hand when ripe and carefully placed in plastic baskets or containers. Once the berries leave the field, they are taken to cooling facilities to help them last longer.

California has several strawberry varieties in commercial production, each with its own characteristics, advantages, and harvest time. Some varieties include Aromas, Camarosa, Camino Real, Diamante and Ventana.

See the School Garden section on page 4 to grow your own strawberry patch.

**For more information, visit:**  
[www.calstrawberry.com](http://www.calstrawberry.com)



## Fruity Facts

Strawberries are the first fruit to ripen in the spring.

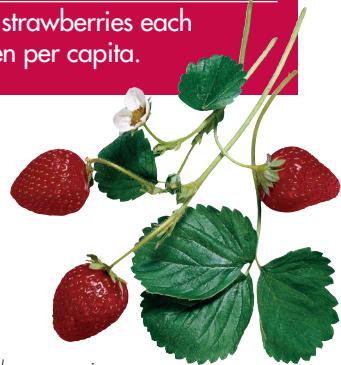
The seeds of the strawberry are really the fruit while the red fleshy part is the receptacle that holds the parts of the flower together.

On average, there are 200 tiny seeds on every strawberry.

Strawberries are the most popular berry in the United States.

Ninety-four percent of United States households consume strawberries.

Americans eat 3.4 pounds of fresh strawberries each year plus another 1.8 pounds frozen per capita.



## What's in a Name?

Pronunciation: strō'bērē

Spanish name: fresa

Family: Rosaceae Genus: *Fragaria*

Species: *Fragaria virginiana*\*

\*See text for more information on various strawberry species.

There are many theories on how the strawberry got its name. Some believe that the name came from the practice of placing straw around the growing plants for protection, or from children in the 19th century who threaded the berries with straw and offered them for sale. Others believe the name originated more than 1,000 years ago with the stolons, or runners, which are horizontal branches at the base of the plant that produce new plants from buds at its tips. The name may have been derived from the Anglo-Saxon verb to strew (spread) and the fruit came to be known as *streadbergen*, *straberry*, *streberie*, *straiberry*, *straberry*, and finally, *strawberry* to the English.

Strawberries are of the genus *Fragaria* in the rose family, and are low herbaceous perennials with edible fruits. The fruits are referred to as an "accessory fruit," meaning that the fleshy part is not derived from the plant ovaries, but from the peg at the bottom of the hypanthium that holds the ovaries. There are about 12 species of strawberry plants. The common wild strawberry, *Fragaria vesca*, is believed to have been the first species cultivated in the early 17th century. Botanists then found other garden varieties, including *Fragaria elatior*, a European species and the parent of *Fragaria virginiana* from the United States. About this time, *Fragaria chiloensis* was discovered on an island off the coast of Chile. Today, nearly all varieties can be linked to these four species.

**For more information, visit:**  
<http://en.wikipedia.org/wiki/Strawberry>

## Student Sleuths

- 1 What is the recommended Daily Value for folate? Fiber?
- 2 What does the red color of strawberry flesh tell you?
- 3 Identify four factors that can influence the flavor of a strawberry.

**For information, visit:**

[www.cfaits.org/Commodity/Commodity.php](http://www.cfaits.org/Commodity/Commodity.php)  
[www.dole5aday.com/ReferenceCenter/Encyclopedia/Strawberries/index.jsp](http://www.dole5aday.com/ReferenceCenter/Encyclopedia/Strawberries/index.jsp)

## Home Grown Facts

California is the largest producer of domestically grown strawberries, supplying 88 percent of the strawberries grown in the United States.

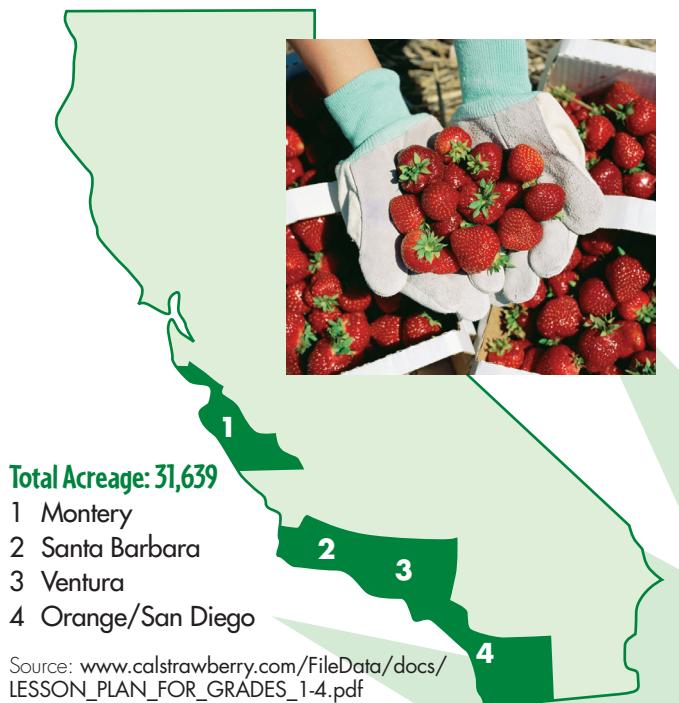
On average, more than 30,000 acres produce over one billion pounds of fresh and frozen strawberries.

If all the strawberries produced in California this year were laid berry to berry, they would wrap around the world 15 times. That is enough strawberries to provide every household in the United States with 12 one-pint baskets.

There are four main growing regions for strawberries in California (see map), each with different growing periods.

### For more information, visit:

[www.cdfa.ca.gov](http://www.cdfa.ca.gov)



## A Slice of Strawberry History

Strawberries have a history that goes back more than 2,000 years. They are indigenous to both the northern and southern hemispheres. Strawberries grew wild in Italy as early as 234 B.C., where the first mention of strawberries occurred in the writings of Cato, a Roman Senator.

European explorers discovered strawberries in North America in 1588 when they landed on the shores of the state of Virginia. The explorers found tiny, sweet, deep red, wild strawberries. Early settlers in Massachusetts enjoyed eating strawberries grown by local American Indians who cultivated them as early as 1643.

The first "refrigerated" shipping of strawberries across the United States occurred in 1843 when some innovative growers in Cincinnati, Ohio spread ice on top of the strawberry boxes and sent them by train. By the middle of the 1800s many regions of the United States were cultivating strawberries. Strawberries have been grown in California since the early 1900s.

### For more information, visit:

[www.ba.ars.usda.gov/fruit/services/strawhist.html](http://www.ba.ars.usda.gov/fruit/services/strawhist.html)

## 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. Strawberries are in the red color group.

- Red fruits and vegetables help maintain a healthy heart, memory function and urinary tract health. They may also lower the risk of some cancers. Examples include strawberries, cherries, raspberries, watermelon, tomatoes, red peppers, radishes and red potatoes.
- Use the *Fresh Fruit and Vegetable Photo Cards* (CDE, 1997) to show students other red fruits and vegetables. Discuss the health benefits of the various color groups.

### For more information, visit:

[www.5aday.com/html/colorway/colorway\\_home.php](http://www.5aday.com/html/colorway/colorway_home.php)

[www.harvestofthemonth.com](http://www.harvestofthemonth.com)

## Literature Links

- Primary: *From Seed to Plant* by Gail Gibbons, *The Victory Garden Alphabet* by Jerry Pallotta and Bob Thomson and *How Does My Garden Grow?* by David Tunkin.
- Secondary: *The Reason for a Flower* by Ruth Heller, *Strawberry Girl* by Lois Lenski and *The Grey Lady and the Strawberry Snatcher* by Molly Bang.
- High School: *Sell What You Sow* by Eric Gibson.

## Student Sleuths

- 1 Map the various regions in California where strawberries are grown. Identify their growing season and main varieties produced. Compare the regions — why does each region grow a different variety? What factors affect when and what variety of strawberries are grown?
- 2 Why is California the nation's leading strawberry producer?

### For information, visit:

[www.calstrawberry.com](http://www.calstrawberry.com)



## Cafeteria Connections

Use different questions about strawberries to conduct a contest over several days in the cafeteria. Use questions based on information contained in this newsletter. For example:

- What is the average number of seeds on a strawberry?
- What is the Spanish word for strawberry?
- What is the botanical name for strawberry?

You can also create your own questions or have older students develop questions and then find the answers. Post questions on the cafeteria bulletin board at the beginning of the week. Then post the answers on Friday. Draw names of the "winners" and have a Strawberry Shortcake Party.

### For more ideas, reference:

*Fruits and Vegetables Galore*, USDA, 2004.

## School Garden: Plant a Strawberry Patch

Growing strawberries in a school environment is easy and an enjoyable learning experience for students. To get started, all you need are some strawberry plants and a growing area that gets at least six hours of sunlight every day.\*

### Growing Tips:

- Plant strawberries on a cloudy day or in the late afternoon.
- Strawberries prefer a well-drained soil, rich in organic matter.
- Set the strawberry plant in the soil so that the soil is just covering the tops of the roots. Do not cover the crown.
- Plants should be set 18 to 30 inches apart in rows of three to four feet apart. This will allow daughter plants to root freely and to become a matted row.
- Do not plant strawberries where peppers, tomatoes, eggplant and potatoes have been grown. These plants could harbor verticillium wilt, a major strawberry disease.
- Strawberry plants need about one inch of water per week.
- After four or five weeks, plants will produce runners and new daughter plants.

\*Refer to *How Do Strawberries Grow?* on page 2 for plant varieties.

Source: [www.urbanext.uiuc.edu/strawberries/growing.html](http://www.urbanext.uiuc.edu/strawberries/growing.html)

### For more ideas, visit:

[www.kidsgardening.com/teachers.asp](http://www.kidsgardening.com/teachers.asp)  
<http://aggie-horticulture.tamu.edu>

## Adventurous Activities

### Creative Writing:

- Discuss the advantages and disadvantages of hand and machine harvesting.

### History Exploration:

- Trace the history of the cross-pollination of the Virginia and Chilean berries.
- Research some medicinal uses of strawberries.

### Science Investigation:

- Without cross-pollination, we would not have the strawberry genotypes available today. Explain what a genotype is. Explain the cross-pollination process versus self-pollination.

### Calendar Connection:

National Strawberry Month and the California Strawberry Festival take place in May. Take students on a strawberry-picking field trip or to a farmers' market. Or invite a strawberry grower to the school.

### For more ideas, visit:

[www.farmtoschool.org/ca/index.htm](http://www.farmtoschool.org/ca/index.htm)  
[www.nal.usda.gov/kids](http://www.nal.usda.gov/kids)  
[www.nutritionforkids.com](http://www.nutritionforkids.com)

## Physical Activity Corner

Students who keep physically active have demonstrated better performance on academic tests. During spring testing, help your students get at least one hour of physical activity every day, in addition to encouraging healthy eating choices. And since May is National Physical Fitness and Sports Month, dedicate this month to doing an outside activity, like a *Relay Race for Kids*, each week.

### Relay Race for Kids

**Objective:** Endurance and team cooperation

### Supplies:

- Hard fruits or vegetables (apples, pears, bell peppers)
- Cone or chair
- Whistle

### Activity:

- Divide students into two, three or four teams
- Line teams up in single file
- Give hard fruit or vegetable to first student on each team
- Position cone about 30 feet from students
- Use whistle as START cue for first student to run around cone and back to team; students hand the fruit or vegetable to next teammate and repeats until all teammates have run around the cone
- Repeat activity as time permits

**Go Farther:** Change it up by having students skip, hop, or run backwards.

**Bring It Home:** With longer daylight hours, encourage students to ask family members to go for walks after dinner, or even a morning jog to jumpstart the brain.

### For more ideas, visit:

[www.kidnetic.com](http://www.kidnetic.com)

## Students for Strawberries

Since strawberries are easy to grow, have students design "Strawberry Instructions" packs that include strawberry seeds, nutrition facts, history and fun illustrations. Send to local senior centers, youth activity centers, or distribute at your school's Open House.



### Up Next!

If you enjoyed exploring strawberries with **Harvest of the Month**, join us next month to learn all about June's featured vegetable — salad greens.

