

Harvest of the Month



Network for a Healthy California



Nutrition Facts

Serving Size: 1 cup, chopped, red tomato (180g)	
Calories 32	Calories from Fat 3
	% Daily Value
Total Fat 0g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 9mg	0%
Total Carbohydrate 7g	2%
Dietary Fiber 2g	9%
Sugars 5g	
Protein 2g	
Vitamin A 30% Vitamin C 38% Calcium 2% Iron 3%	

Source: www.nutritiondata.com

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

TOMATOES
September

Health and Learning Success Go Hand-in-Hand

The new academic year is an ideal time to teach students about the importance of eating healthy and being physically active. Research has demonstrated improved short-term memory, mood and overall academic performance when students eat a variety of nutrient-rich foods and get regular physical activity. **Harvest of the Month** connects with core curricula and links the classroom, cafeteria, home and community.

Exploring California Tomatoes

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

Tools:

- Variety of tomatoes in assorted colors*
- One tomato variety per every four students
- Dry erase board, markers

*See *What's in a Name?* on page 2 for varieties. Harvest from your school garden.

Sensory Exploration Activity:

- Label five columns on board: smell, sound, appearance, texture, taste
- Label rows according to tomato varieties
- Guide students to observe, smell, feel and taste tomatoes
- Note students' observations on board
- Discuss similarities and differences among varieties
- Graph each student's favorite variety on board to determine overall class favorite

For more ideas, visit:

www.fns.usda.gov/tn/

Cooking in Class: Salsa Fresca

Ingredients:

Makes 36 tastes at ¼ cup each

- 3 pounds tomatoes, chopped
- 1 cup fresh cilantro, chopped leaves
- 5 cloves garlic, chopped
- 4½ cups white or red onion, diced
- 3 limes, quartered
- ¾ teaspoon salt
- Small paper cups
- Baked tortilla chips

Combine tomatoes, garlic, onions and cilantro in large bowl. Squeeze juice of one lime into bowl. Add salt and more lime juice to taste. Serve in small cups with baked tortilla chips.

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

For more ideas, visit:

www.fruitsandveggiesmatter.gov/month/tomato.html



September Events

- National Food Safety Education Month
- Better Breakfast Month
- Family Health and Fitness Day

Reasons to Eat Tomatoes

One serving of tomatoes provides:

- An excellent source of Vitamins A and C.
- A source of potassium, Vitamin B6 and thiamin.
- Rich in lycopene, the carotenoid responsible for the red color in tomatoes and other red fruits and vegetables.

A serving of tomatoes is about one cup chopped tomato.

This is a big serving for a child.

Introduce smaller amounts, like one-half cup, to help children reach their total daily needs.

Lycopene is a powerful antioxidant that decreases the risk of certain cancers and heart disease. Cooked tomato products, sauces and juices contain higher amounts of lycopene than raw tomatoes due to greater concentration.



What's in a Name?

Pronunciation: tə-mā'tō
Spanish name: tomate
Family: Solanaceae
Genus: *Solanum*
Species: *S. lycopersicum*



The tomato is a berry of the nightshade family, which includes potatoes, eggplants and peppers. The word “tomato” is derived from the Nahuatl (Aztec language) word, *tomatl*, meaning “something round and plump.” Over the years, the tomato has endured many names including “love apple,” “golden apple,” “apple of paradise” and even “devil apple” by those who believed the tomato to be poisonous.

Varieties are commonly divided into these categories, based mostly on shape, use and size (small to large):

- **Cherry:** sweet tomatoes, usually eaten whole in salads
- **Plum:** pear-shaped, more meaty, ideal for tomato products, also called Italian or Roma
- **Slicing:** round or globe-shaped, used mainly for commerce and processed products
- **Beefsteak:** round, juicy, used mainly for sandwiches

Other varieties include heirlooms and yellow/orange tomatoes. Sweeter than most red or green, yellow/orange tomatoes contain more Vitamin C and potassium, but no lycopene.

For more information, visit:
www.plants.usda.gov

Eat Your Colors

Fruits and vegetables come in a variety of colors — red, yellow/orange, white, green and blue/purple. These may lower the risk of some cancers. Tomatoes can be red, yellow/orange or green.

Color Groups	Health Benefits	Examples
Red	Help maintain heart health, memory function and urinary tract health	Red tomatoes, red apples, pink grapefruit, beets, red peppers, red onions and radishes
Yellow/Orange	Help maintain heart health, vision health and a healthy immune system	Yellow tomatoes, yellow pears, oranges, grapefruit, sweet potatoes, yellow peppers and rutabagas
Green	Help maintain vision health and strong bones and teeth	Green tomatoes, green pears, kiwis, avocados, green peppers, cucumbers and zucchini

For more information, visit:
www.fruitsandveggiesmatter.gov



Just the Facts

- The tomato is the world's most popular fruit with more than 60 million tons produced worldwide.
- There are more than 4,000 varieties of tomatoes ranging in size, shape and color.
- Botanically, the tomato is a fruit. However, in 1893, the U.S. Supreme Court declared it as a vegetable.*
- According to the USDA, Americans eat more than 22 pounds of tomatoes each year, more than half of this amount in the form of ketchup and/or tomato sauce.
- Tomatoes are grown in every state in the United States except Alaska.



*See *A Slice of Tomato History* on page 3 for more information.

Sources:

www.cfaitc.org
<http://en.wikipedia.org/wiki/Tomato>

Student Sleuths

- 1 What is the origin of the word “tomato”? What are some other names for the tomato?
- 2 California grows what percentage of the nation's tomatoes for processing? List five processed tomato products available in most grocery stores.
- 3 List three nutrients found in a tomato. Name some of the health benefits of these nutrients. Describe the impact of processing, if any, on each nutrient.
- 4 Using a California map, color in the top three tomato-producing counties. In what months does peak harvesting take place in these counties?
- 5 How are processing tomatoes harvested differently than fresh market tomatoes? Why do processing tomatoes have thicker skins?

For information, visit:

www.eatcatomatoes.org
www.cfaitc.org/Commodity/pdf/ProcessingTomato.pdf

Adventurous Activities

Many factors affect agricultural production. Techniques like selective breeding, genetic engineering and more efficient farming practices have allowed growers to produce crops that are more plentiful, safer for the environment, more nutritious and better tasting. Research how tomato production has evolved with advancing technology.

Source: “Catch Up on Tomato Technology,” CFAITC, 2001.

For more activities, visit:

www.harvestofthemonth.com

Cafeteria Connections

- Offer different salsas when serving tacos, taco salad or burritos. Include salsa in the baked potato and garden bar.
- Ask students about their favorite ways to eat tomatoes. Conduct a survey or talk to students in the classroom or during lunch hour.
- Select a team of "Student Advocates" (below) to help identify local tomato growers or distributors who can sell tomatoes to the school/district.



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

Student Advocates

- Visit local grocery stores. Find out if the store buys/sells fresh tomatoes that are grown by local farmers (or in California), out-of-state or abroad?
- If the store does not purchase tomatoes from local growers, identify the rationale.
- Propose options for stores to consider purchasing tomatoes from local or regional growers.

A Slice of Tomato History

- The first tomatoes can be traced back to the Andes in Peru, where they grew wild as cherry-sized berries. As early as 700 A.D., the Incas and Aztecs began cultivating tomato plants.
- Mexico's Aztecs and Mayans gave the tomato its name, first "xitomatle," then "tomatle" or "tomati."
- In the mid-1500s, Spanish conquistadors carried tomato seeds back to Europe, where they were embraced in Italy, Spain and Portugal.
- In 17th and 18th century England, tomatoes were believed to be poisonous. (Eating the stems and leaves may cause illness and should be avoided.)
- Thomas Jefferson was one of the first Americans to grow tomatoes at his Virginia home as early as 1781. By 1812, tomatoes were gaining in popularity among Louisiana Creoles, who used them in jambalayas and gumbos, and Maine cooks, who added them to seafood dishes.
- In the 1893 U.S. Supreme Court case of "Nix v. Hedden," the tomato was declared a vegetable, along with cucumbers, squashes, beans and peas. This came about as a result of tariff laws in 1887, which imposed a duty on vegetables but not fruits.
- George Washington Carver believed tomatoes had "medicinal virtues." After World War I, he issued "115 Ways to Prepare It [Tomatoes] For the Table" thus marking the introduction of the tomato into popular culture.

For more information, reference:

Growing Vegetables California Style, Marsha Prillwitz, 1988.
www.cfaitc.org/Commodity/pdf/ProcessingTomato.pdf
<http://aggie-horticulture.tamu.edu>

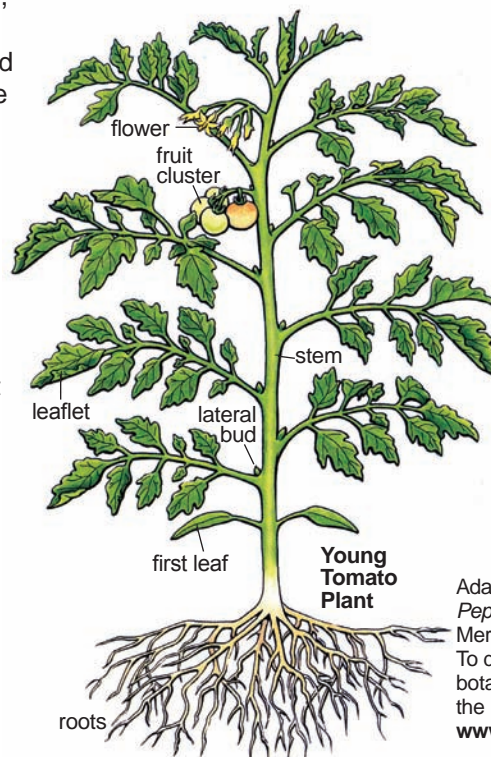
How Do Tomatoes Grow?

The tomato is a warm-weather perennial plant, sensitive to frost at any stage of growth. In California, fresh-market tomatoes are grown using one of two methods: bush or pole. In the Central Valley, 100 percent of all tomatoes are grown using bushes, while most Southern California coastal counties practice the pole method.

	Bush-Harvesting	Pole-Harvesting
Temperature	70-80 F (High: 100 F; Chilling: 50 F)	Same as bush
Soil	Clay and loam (produce most plentiful crops); in wet areas, sandy soils	Same as bush
Vines	"Determinate," short; bushes without support	"Indeterminate," long, climbing; supported by stakes
Planting	Seeds planted on raised beds, single row, 18" apart	In beds 5'-6' long, single row, 18" apart; stakes posted every 2'-3'
Fruits	Develop from flower ovaries (like berries); either bilocular or multilocular	Same as bush
Harvesting	Hand-harvested at mature green fruit stage about 80 to 110 days after planting; picked total 1-2 times	Hand-harvested as vine-ripe for 70 to 120 days or longer; picked 1-3 times per week
Common varieties	Shady Lady, Sunbrite, Roma, QualiT 21, Merced, Sonnet	Bingo, Merced, Tango, Celebrity

For more information, visit:

<http://anrcatalog.ucdavis.edu/pdf/8017.pdf>



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

Physical Activity Corner

To achieve optimal learning in the classroom, studies show that students need to activate their minds and bodies. The *Physical Education Model Content Standards for California Public Schools* assist schools in establishing specific learning goals and objectives for physical education. Schools should be designing sequential, developmentally appropriate curriculum and implementing it to help students acquire the knowledge, skills, attitudes and confidence needed to adopt and maintain a physically active, healthy lifestyle.

There are five overall model content standards for elementary and middle school students. For information on the high school standards, visit the Web sites provided below.

Standard 1: Demonstrate motor skills and movement patterns needed to perform a variety of physical activities.

Standard 2: Demonstrate knowledge of movement concepts, principles and strategies as they apply to learning and performance of physical activities.

Standard 3: Assess and maintain a level of physical fitness to improve health and performance.

Standard 4: Demonstrate knowledge of physical fitness concepts, principles and strategies to improve health and performance.

Standard 5: Demonstrate and utilize knowledge of psychological and sociological concepts, principles and strategies as applied to learning and performance of physical activity.

Find out how your district is implementing these standards and what you can do to implement them in the classroom.

For more information, visit:

www.cde.ca.gov/ci/pe/cf/

Home Grown Facts

- California is the nation's tomato capital. Ninety-five percent of processing tomatoes and about 75 percent of all tomatoes are grown in California.
- Tomatoes are grown throughout the state, but about 90 percent of California grown tomatoes are harvested in nine counties.
- The largest fresh-market tomato producing counties, in order, are San Joaquin, Merced, Fresno, San Diego, Kern, Stanislaus, Kings, Tulare and Sacramento.

For more information, visit:

www.cfaitc.org

www.cdfa.ca.gov

School Garden: Seed Saving

Tools:

- 3–6 non-hybrid tomato plants of same variety (preferably from school garden)
- Wide-mouth, plastic container
- Cheesecloth or other fabric
- Glass/ceramic plate or cookie sheet
- Glass jar or envelope
- Rubber band

Activity:

- Pick 3–6 tomatoes from each plant.
- Slice tomatoes in half and squeeze seedy part into plastic container.
- Add water to seeds to double total volume of liquid.
- Cover container with cheesecloth and secure with rubber band.
- Leave seeds at room temperature for 3–5 days or until film of mold forms on surface.
- Remove mold film. Again, add water to double liquid mixture and stir. The good seeds will sink to the bottom.
- Pour out excess liquid and rinse seeds several times with strainer.
- Spread clean seeds on plate and set aside, away from sunlight or heat.
- Dry seeds for several days. Once dry, place seeds in jar. Label with variety name and date.
- Store in dark location (e.g., drawer, closet). For storage longer than two years, use airtight container and store in cool, dry garage or refrigerator.

Adapted from: *Tomato Time*, Carol Hillhouse, 2005.

For more information, visit:

A Child's Garden of Standards, CDE, 2004.

<http://childrensgarden.ucdavis.edu>

Literature Links

- **Elementary:** *Tomatoes from Mars* by Arthur Yorinks and *Tomatoes* by Elaine Landau.
- **Secondary:** *I Will Never Not Ever Eat a Tomato* by Lauren Child and *Carrots Love Tomatoes: Secrets of Companion Planting* by Louise Riotte.

For more ideas, visit:

www.cfaitc.org/Bookshelf/Bookshelf.php



Next Month: Winter Squash

