

HEALTH AND LEARNING SUCCESS GO HAND-IN-HAND

The classroom is an ideal place to teach students about the importance of eating healthy and being physically active. Studies show a relationship between good nutrition and improved behavioral performance, particularly among those with poor nutritional status. Harvest of the Month connects with core curricula and links the classroom, cafeteria, home, and community.

BOTANICAL FACTS

Pronunciation: *tō-mō'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, green, orange, and yellow tomatoes. Yellow and orange tomatoes tend to be sweeter than red and green varieties; only red tomatoes, which contain a red pigment, contain lycopene.

REASONS TO EAT TOMATOES

Tomatoes are considered a “Super Food” because they are nutrient dense. One, four-ounce tomato:

- Supplies about one-third of the recommended daily allowance for vitamin C
- Contains beta-carotene, potassium, folic acid and vitamins A, B and K, iron, and fiber.
- Is rich in lycopene*, which is a type of phytonutrient called a carotenoid.
- Tomatoes are a naturally low-calorie food.

For more information, visit <http://wisconsinfreshproduce.org/vegfacts/Tomato.htm>



Nutrition Facts

Serving Size: 1/2 cup tomatoes, sliced (90g)
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 4g 1%

Dietary Fiber 1g 4%

Sugars 2g

Protein 1g

Vitamin A 15%

Calcium 1%

Vitamin C 19%

Iron 1%



The Harvest of the Month FEATURED VEGETABLE IS TOMATOES

HOW DO TOMATOES GROW?

The tomato is a warm-weather perennial plant, sensitive to frost at any stage of growth. For planting, choose an area with well-prepared soil that gets at least 7-8 hours of sun each day. Tomatoes can be planted from seeds or as young plants. Ask a local nursery or the county extension office about types that grow best in your area. There are hundreds of varieties of tomatoes to choose from that can be grown by bush or pole.

	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	70-80 F (High: 100 F; Chilling: 50 F)	Same as bush
Temperature	Shady Lady, Sunbrite, Roma, QualiT 21, Merced, Sonnet	Bingo, Merced, Tango, Celebrity

Daily watering can help prevent many tomato diseases, cracking and blossom-end rot. Tomatoes need 1-3 inches of water each week, depending on temperatures. Tomatoes can be harvested from mid-June to mid-October.

* Determinate tomatoes stop growing at around 3 feet. Indeterminate tomatoes don't stop growing. These don't need to be caged or put on a trellis.

For more information, visit <http://hort.uwex.edu/topics/vegetables> and www.tomatodirt.com

WHAT IS LYCOPENE?

Lycopene is an antioxidant pigment that gives foods their reddish color; it is found in tomatoes, watermelon, and pink grapefruit.

Lycopene is a carotenoid, which is an antioxidant that may decrease the risk of certain cancers and heart disease and also help to keep the immune system healthy.

Lycopene cannot be produced in the body so it can only be obtained by eating lycopene-rich foods.

Cooked tomato products, sauces, and juices contain higher amounts of lycopene than raw tomatoes due to greater concentration (i.e., it takes many cups of raw tomatoes to make one cup of tomato sauce, and thus the lycopene concentration is greater).

For more information, visit www.eatright.org/Public/content.aspx?id=3542&terms=lycopene

HOW MUCH DO I NEED?

A ½ cup of sliced tomatoes is about one small tomato. This is about the same as one cupped handful. The amount of fruits and vegetables each person needs depends on age, gender, and physical activity level.

Download a food tracking worksheet* from USDA's Team Nutrition. Have students write down their daily goals and track their food choices. At the end of each week, review worksheets as a class and have students assess if they met their goals and where they need improvement.

*Download worksheet from http://teamn nutrition.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.

SCHOOL GARDEN ACTIVITY: TOMATOES GALORE

Select a colorful variety of tomatoes from the school garden, farmers' market, or supermarket.*

Download the botanical image from www.harvestofthemonth.org. Discuss the growing process for tomato plants. Have students identify parts of the plant and tomato.

Have students look up the nutrition information for each variety.

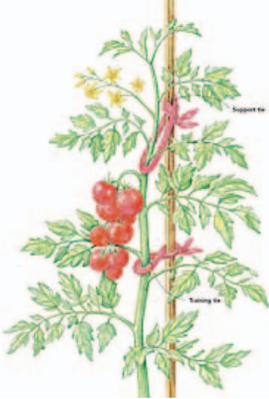
Compare the different nutrients in each variety. Discuss why different varieties (and different colored tomatoes) have different nutrients.

Adjust this activity for grade appropriateness as needed.

*Suggested varieties: roma, heirloom, cherry tomatoes, better boy tomatoes, beefsteak tomatoes, etc.



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

FUN FACTS

There are about 25,000 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 a vegetable.*

While tomatoes are safe to eat, their leaves contain tomatine which is poisonous when consumed in large amounts.

According to USDA, Americans eat more than 22 pounds of tomatoes each year, more than half of the amount is in the form of salsa, ketchup and/or tomato sauce.

Fresh market tomatoes are grown in all 50 states in the United States.

Among those who garden, 93% of American households grow tomatoes.

Beefsteak and heirloom tomatoes are only available seasonally in Wisconsin (mid-July through October), but other types may be found year-round in supermarkets.

The Sheboygan tomato has been grown since the early 1900s in Sheboygan, Wisconsin by Lithuanian immigrants.

For more information, visit: <http://www.wisconsinfreshproduce.org/vegfacts/Tomato.html>

<http://www.tomatodirt.com/tomato-facts.html>

<http://www.totallytomato.com/dp.asp?plD=00644>

<http://www.localharvest.org/ark-product.jsp?id=135>

EXPLORING WISCONSIN TOMATOES: TASTE TESTING

What You Will Need:

Variety of tomatoes*

One tomato of each variety per every four students

Cutting board and knife for each student group

Dry erase board and markers

Activity:

Label five columns on board: smell, sound, look, 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/

LITERATURE LINKS

Elementary: *Tomatoes from Mars* by Arthur Yorinks, *Tomatoes* by Elaine Landau, and *I Will Never Not Ever Eat a Tomato* by Lauren Child.

Secondary: *Carrots Love Tomatoes: Secrets of Companion Planting* by Louise Riotte.

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 www.cfaic.org/factsheets/pdf/ProcessingTomato.pdf



**COOKING IN CLASS:
PICO DE GALLO**

Makes 36 tastes at ¼ cup each

Ingredients:

3 pounds tomatoes, chopped

4½ cups chopped onion

1 cup chopped fresh cilantro

9 jalapeño peppers, seeds removed and
chopped

6 cloves garlic, finely chopped

6 tablespoons lime juice

¾ teaspoon salt

Small paper cups

Baked tortilla chips

1. Combine all ingredients in a large bowl.
2. Serve in small cups with baked tortilla chips.

Nutrition information per serving: Calories 17,
Carbohydrate 4 g, Dietary Fiber 1 g, Protein 0
g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat
0 g, Cholesterol 0 mg, Sodium 52 mg*

**Information for Pico de Gallo only; does
not include tortilla chips.*

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

For more ideas, visit

www.fruitsandveggiesmatter.gov/month/tomato.html

PHYSICAL ACTIVITY CORNER

To achieve optimal learning in the classroom, studies show that students need to activate their minds and bodies. Here is a quick (5-10 minute) activity that you can do with your students to help energize their bodies.

Have students pretend they are on a trip to the farm and move their bodies to each prompt (spend 30 seconds to one minute on each activity).

- 1 Climb the apple tree.
- 2 Walk through the tall corn fields.
- 3 Squat down and pick up the pumpkins and load them in the truck.
- 4 Pull carrots from the ground.
- 5 Reach for oranges on the tree.
- 6 Bend down and pick up tomatoes to put in your basket.
- 7 Push the wheelbarrow of hay.
- 8 Run to open the gate for the cows.
- 9 Swim like a fish in the pond.
- 10 Dig holes to plant potatoes.

For more information, visit: www.cde.ca.gov/ci/pe/cf/

COMMUNITY CONNECTIONS

Ask school nutrition staff to offer different salsas when serving tacos, taco salad, or burritos; also suggest including salsa in the baked potato and garden bar.

Conduct a survey during the lunch hour asking students about their favorite ways to eat tomatoes.

Identify Farmer's Markets and U-Pick farms where you can buy local tomatoes.

Identify growers or distributors who can sell tomatoes to the school/district. Share the list with school nutrition staff.

Visit local grocery stores. Find out if the store buys/sells fresh tomatoes that are grown by local farmers, out-of-state, or abroad? If the store does not purchase tomatoes from local growers, find out why not.

Propose options for grocers or restaurants to consider purchasing tomatoes from local or regional growers.

Ask stores for tomato plant donations for school garden or classroom.