

Harvest of the Month



Network for a Healthy California



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%

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.harvestofthemoth.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.harvestofthemoth.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.

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

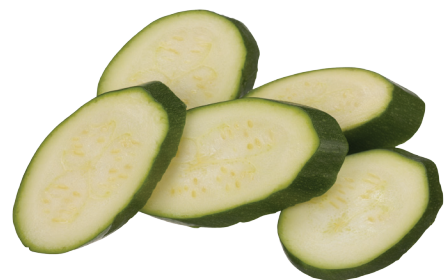
A ½ cup of sliced zucchini is:

- A good source of vitamin C.
- A source of manganese, potassium, and vitamin B₆.

Champion sources of vitamin C:*

- Grapes
- Peppers
- Green beans
- Swiss chard
- Melons
- Tomatoes

*Provide a good or excellent source of vitamin C.



ZUCCHINI

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.

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.choosemyplate.gov to learn more.



Botanical Facts

Pronunciation: zū-'kē-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.

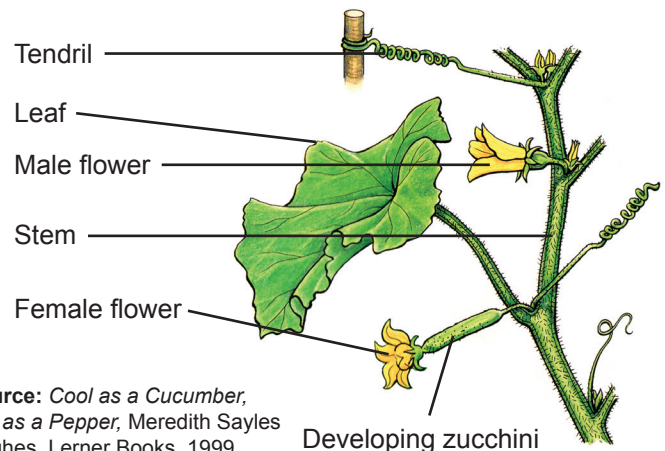
During the growing season, the ratio of male to female flowers on a plant is at least three to one. Only the female flowers can bear fruit and honeybees are the primary pollinators. The fruit grows from the base of the female flower on a short stem. Once fruit is set, zucchini can grow up to 1 inch per day.

For a chart with information about how to plant and grow zucchinis, refer to *Zucchini Botanical Images* (in the Educators' Corner) on www.harvestofthemoth.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.

Developing zucchini

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 Champions

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.cdffa.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.healthyla.usd.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.

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