

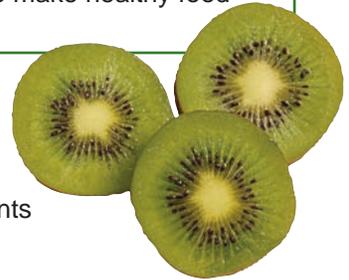
# Harvest of the Month



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.

## 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](http://www.nal.usda.gov/fnic/foodcomp/search) (NDB No: 09148)



## 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

## 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](http://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 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](http://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](http://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.choosemyplate.gov](http://www.choosemyplate.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](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.choosemyplate.gov](http://www.choosemyplate.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](http://www.nal.usda.gov/kids)

[www.agclassroom.org](http://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](http://www.fsa.usda.gov/ca)

[www.cfaitec.org](http://www.cfaitec.org)

[www.agclassroom.org](http://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](http://www.kiwifruit.org)

[www.thefresh1.com/kiwifruit.asp](http://www.thefresh1.com/kiwifruit.asp)

[www.fruitsandveggiesmatter.gov](http://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](http://www.kiwifruit.org)

## A Slice of Kiwi History

The history of the kiwi began in the Yangtze 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](http://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](http://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/](http://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](http://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](http://www.harvestofthemonth.com)

