

Harvest of the Month



Network for a Healthy California



Nutrition Facts

Serving Size: ½ cup carrots, sliced (61g)

Calories 25 Calories from Fat 0

% Daily Value

Total Fat 0g 0%

Saturated Fat 0g 0%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 45mg 2%

Total Carbohydrate 6g 2%

Dietary Fiber 2g 7%

Sugars 3g

Protein 1g

Vitamin A 204% Calcium 2%

Vitamin C 6% Iron 1%

CARROTS

Health and Learning Success Go Hand-In-Hand

School gardening presents a great opportunity to teach students about fruits and vegetables and actively engage them in physical activity. Studies have shown that school-based nutrition education promoting healthful eating and physical activity can improve academic performance. *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 Carrots: Taste Testing

What You Will Need (per student group):

- Raw carrots, peeled and sliced into sticks; one stick per student
- Canned carrots; enough to provide each student with a taste
- Paper and pencils
- Printed Nutrition Facts labels for fresh and canned carrots*

*Download labels from www.harvestofthemoth.com.

Activity:

- Taste raw carrots and note the color, texture, smell, flavor, and sound.
- Repeat activity with the canned carrots.
- Compare and contrast the similarities and differences, including the nutrition information.
- Using information from observations and research, apply in a writing activity.
- Compare ideas and observations of carrot taste testing with previous taste testings.

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 Medley with Salsa Dip

Makes 32 tastes at ¼ cup vegetables and 2 tablespoons dip each

Ingredients:

- 4 carrots, cut into 3-inch sticks
- 4 celery stalks, cut into 3-inch sticks
- 1 jicama, peeled and cut into 3-inch sticks
- 1 bunch radishes, trimmed
- 12 green onions, trimmed
- 1 (16-ounce) container fat free sour cream
- 2 cups pico de gallo (salsa)
- Small paper plates and napkins

1. Arrange vegetables on a platter.
2. In medium bowl, mix sour cream and pico de gallo.
3. Spoon 2 tablespoons dip and 1 of each vegetable on small plate. Serve.

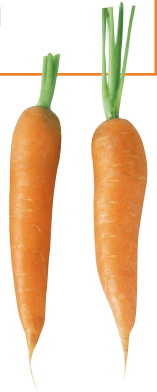
Nutrition information per serving:

Calories 25, Carbohydrate 5 g, Dietary Fiber 2 g, Protein 1 g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 1 mg, Sodium 77 mg

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

For more ideas, reference:

Kids Cook Farm-Fresh Food, CDE, 2002.



Reasons to Eat Carrots

A ½ cup of fresh or cooked carrots is:

- An excellent source of vitamin A, providing more than 200% of the recommended Daily Value.
- A good source of vitamin K.
- A source of vitamin C, fiber, and potassium.

*Learn more about vitamin A on page 2.

Champion Sources of Vitamin A*:

- Cantaloupe
- Carrots
- Cooked greens
- Red bell peppers
- Sweet potatoes
- Winter squash

*Champion sources provide an excellent source of vitamin A (at least 20% Daily Value).

For more information, visit:

www.nal.usda.gov/fnic/foodcomp/search/ (NDB No.: 11124, 11125, 11131)



What is Vitamin A?

- Vitamin A is a fat-soluble vitamin, which means it can be stored for long periods of time in your body.
- Vitamin A is an antioxidant that helps to keep the body safe from free radicals. Among Americans, toxic consumption levels of vitamin A are more of a concern than deficiencies.
- Vitamin A is required for the proper development and functioning of our eyes, skin, and many other parts of our bodies.
- Individuals who have low levels vitamin A may develop night blindness.
- Vitamin A is required for normal functioning of the immune system.
- Vitamin A that is found in colorful fruits and vegetables, like carrots, is called provitamin A carotenoid. It can be made into retinol in the body. Some carotenoids (like beta carotene, alpha carotene, and beta cryptoxanthin) can be made into vitamin A by the body.

Sources:

<http://lpi.oregonstate.edu/infocenter/vitamins/vitaminA/>
<http://jn.nutrition.org/>
<http://ods.od.nih.gov/factsheets/vitamina.asp>

How Do Carrots Grow?

Carrots are biennial, meaning they have a two-year life cycle. In the first year, the edible root is formed, followed by production of the flower and seeds in the second year. Carrots can be grown most anywhere. The ideal temperature range is 60 to 70 F. For this reason, carrots are grown year-round in California. They require a growing season of 110 to 160 days and need deep, loose, well-drained soils.

Prior to planting, the soil is plowed deep and disked to avoid clods; a compaction layer also helps keep the roots from becoming forked or rough. Germination of the seedlings may be advanced by sowing them in V-shaped furrows. Seeds are then covered with a quarter-inch layer of sand or sifted compost. Most fields are sprinkler-irrigated during the entire growing season. Carrots are mechanically harvested with self-propelled multi-row harvesters that can harvest up to 1,000 tons per day.

Carrot varieties vary only slightly in taste, shape, or size, so most consumers are unable to tell one variety from another. Varieties are actually grown in particular growing regions or for specific uses. For example, carrots found in supermarkets that are packaged in cello bags are grown specifically larger and for the supermarket.

Baby-cut carrots are made from full-grown, small diameter carrots by peeling and cutting them to the desired length. They are planted closer together so the roots stay slim and there is less waste when the carrots are cut to their small size. True baby carrots are removed from the ground early and actually look like miniature carrots.

For more information, visit:
www.botany.org

How Much Do I Need?

A ½ cup of sliced carrots is about one medium carrot or four baby carrots. This is the same as about one cupped handful. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. Have students visit www.mypyramid.gov/kids to find out how much they need to eat from each group in MyPyramid. Have them write down their goals and track them each week.

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.

Botanical Facts

Pronunciation: kăr'ət

Spanish name: zanahoria

Family: Apiaceae

Genus: *Daucus*

Species: *D. carota*



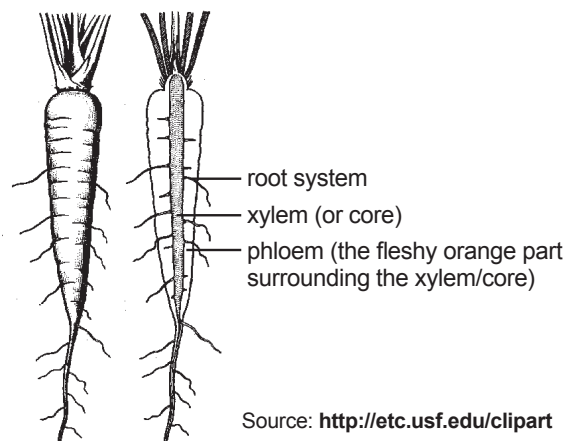
The carrot is a root vegetable of the Apiaceae family. The edible part of a carrot is known as a “taproot.” This plant is cultivated for its enlarged edible root and its foliage is fine and lacy. In fact, the wild carrot is actually a familiar wildflower known as “Queen Anne’s lace.”

Carrots are commonly grouped into two main varieties: eastern and western. Eastern carrots are the original cultivar and are usually purple or yellow in color and have fewer branched roots. The purple color stems from an anthocyanin pigment lost in later varieties. (See *The Roots of Carrot History* on page 3 for details.) Western carrots emerged in the Netherlands in the 15th or 16th century. Their orange color made them popular among countries associated with the House of Orange and the Dutch struggle for independence.

Carrots contain plant pigments called *carotenoids*, of which beta carotene is a member. These pigments were first identified in carrots (giving them their orange color) and their name was thus derived from the word *carrot*.

For more information, visit:

www.caes.uga.edu/publications/pubDetail.cfm?pk_id=7429



Source: <http://etc.usf.edu/clipart>

The Roots of Carrot History

- Carrots originated in central Asia, near Afghanistan, several thousand years ago.
- Ancient ancestors of the modern carrot were not yellow-orange, but of purplish colors ranging from lavender to almost black. The yellow-orange root came from a mutant variety that lacked the purple pigment.
- Purple and yellow-orange varieties spread west to the Mediterranean, where ancient Greeks and Romans used them for medicinal purposes.
- In the 14th century, carrots arrived in China, which is now the world's leading carrot producer.
- Around the 1600s, the purple variety nearly became extinct, and the yellow-orange variety was introduced to America and Japan.
- The high beta carotene content of carrots was discovered in the 19th century. During World War II, the British worked to develop a variety of higher beta carotene carrots to help their aviators see better at night.



For more information, visit:

www.cfaitc.org/factsheets/pdf/FreshCarrots.pdf

Student Sleuths

- 1 Name three specific functions that vitamin A provides for the body.
- 2 What are some of the signs of vitamin A deficiency?
- 3 The percent Daily Value (%DV) tells you how much of a nutrient you get in a serving of a food item and is based on a 2,000-calorie diet. Vitamin A is measured in International Units (IU). Look up the IU for vitamin A that your body needs based on your gender and age. Compile a list of foods you eat and find the %DV for vitamin A in these foods. Determine if you are getting an adequate amount of vitamin A in your diet.
- 4 Map the different commercial carrot-producing regions in the world.
- 5 Identify and compare the peak harvest times for carrots in each California region.

For information, visit:

www.fruitsandveggiesmatter.gov/month/carrot.html
www.ipmcenters.org/cropprofiles/docs/cacarrots.html
<http://ohioline.osu.edu/hyg-fact/5000/5551.html>
<http://lpi.oregonstate.edu/infocenter/vitamins/vitaminA/>

Student Champions

Encourage students to come up with a slogan for healthy eating. Students can design promotional inserts, pins, and posters that display the slogan and fun facts about healthy eating. Students can distribute these materials to customers at local farmers' markets, grocery stores, restaurants, and hospitals to show support for healthy eating habits.

School Garden: From Seed to Life

If your school has a garden, here is an activity you may want to implement. Look for donations to cover the cost of seeds, tools, irrigation systems, electric pumps, and any salary incurred by garden educators or others.

Students who work directly with plants or in a garden are more likely to understand the important role plants and agriculture play in our lives. Discuss how plants contribute to our society and health. Students can then plant a "container garden" to give to a person or organization, such as a children's hospital, nursing home, neighbor, or take home to their family.

What You Will Need:

- Small plant containers
- Variety of plants
- Bagged soil mix*
- Basin for moistening soil

*Note: Garden soil is too heavy for small containers and often contains weed seeds.

Activity:

- Fill container with moistened soil mix.
- Loosen plant from its original pot by gently squeezing the bottom of the container or gently tapping it on the ground to loosen the root ball.
- Carefully move to new container and plant at same depth as it was in the old pot.
- Gently firm the soil in around the plant.
- Place container in a spot where it can drain, such as a sink basin or on the ground outside.
- Use a watering can to water the soil very gently, being careful not to create pockets around settled soil.
- Create plant labels and decorate note cards with care instructions to accompany each plant container.

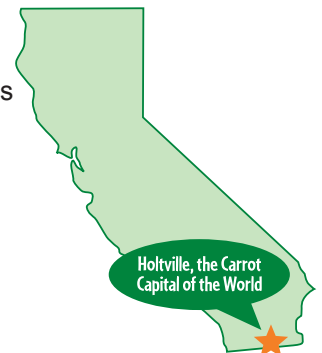
Adapted from: www.kidsgardening.com/Dig/dig.asp?act=

For more ideas, reference:

Nutrition to Grow On, CDE, 2004.

Home Grown Facts

- California ranks first nationally in the production of carrots.
- Carrots rank among California's top 25 agricultural exports and top three among vegetables.
- Baby-cut peeled carrots account for more than 35% of California's carrot production and 70% of the total acreage.
- Holtville, California is known as the "Carrot Capital of the World."
- Kern County is the state's largest producer of carrots with 75% of the state's acreage.
- There are four main carrot-producing regions in California: Southern San Joaquin Valley/Cuyama Valley, Southern Desert, Central Coast, and High Desert.



Source: www.fsa.usda.gov/ca/

For more information, visit:

www.ipmcenters.org/cropprofiles/docs/cacarrots.html
www.cdffa.ca.gov

Physical Activity Corner

Students need to get at least 60 minutes of physical activity each day to help them stay healthy and fit, both mentally and physically. Take time to play a different game or activity each week in or out of the classroom.

Objective:

Develop hand-eye coordination and fast-twitch reflexes.

What You Will Need:

- Frisbee®
- Four bases
- Slide

Activity: (similar to baseball)

- Separate students into two teams.
- Set up four bases on playground near slide.
- “Batter” goes down the slide and takes Frisbee® at home plate and throws it.
- If it’s “fair” and no one catches the Frisbee®, then “batter” runs the bases.
- Tagging is done with the Frisbee® and someone must be holding it.
- After three outs, the teams switch.
- Play as many rounds as time allows.

For more ideas, visit:

www.sparkpe.org

Adventurous Activities

Creative Writing:

- Based on the *School Garden* discussion (page 3), ask students to write an essay about how carrots (or their favorite fruit or vegetable) contribute to our health and the state’s economy.

Science Investigation:

- Demonstrate the water content of carrots.
- Fill a glass of water with ink or food coloring and then put a carrot in the glass.
- Remove carrot after one day and cut it in half, separating the top and bottom halves.
- Ask students questions about what they see and compare it with a raw, cut carrot.
- Cut the halves lengthwise to study the “veins” in a carrot.

Nutrient Analysis:

- Distribute *Fresh Fruit and Vegetable Photo Cards** (CDE, 1997) for carrots, sweet potatoes, beets, and turnips.
- For each item, calculate the number of grams of the nutrients in the graphs by using the percentages shown in the graph and daily values.

*Download from www.harvestofthemonth.com.

For more ideas, visit:

www.hhs.gov/kids

Cafeteria Connections

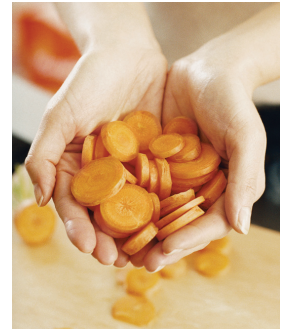
Work with school nutrition staff to find out which form of raw and/or cooked carrots students prefer.

- Conduct taste tests during lunch.
- Older students or a math class may be interested in conducting the taste test and determining cost, student preference, and nutrient analysis.
- Students can taste test the various ways in which raw carrots may be served, such as whole, sticks, baby, mini, sliced, and shredded. Students can also test cooked carrots.
- After the taste tests, feature the school’s “choice” on the school lunch menu. On the same day, fill a jar with the “favorite carrot choice” and ask students to guess how many carrots it took to fill the jar. Provide incentives and/or awards as appropriate for your school site.

For more ideas, reference:

Fruits and Vegetables Galore, USDA, 2004.

www.schoolnutrition.org



Just the Facts

- The average person eats 17 pounds of carrots per year.
- Carrots contain about 90% water.
- Most baby-cut carrots are made from large carrots that have been peeled and trimmed. The trimmings are used in salad mixes, juices, and other carrot products.
- The carrot was one of the first vegetables to be canned in the early 1800s.
- Carrots, or “skirrets,” were originally purple, white, and yellow. The orange carrot was developed in Holland as a tribute to William I of Orange during the Dutch fight for independence from Spain in the 16th century.

For more information, visit:

www.cfaitc.org/factsheets/pdf/FreshCarrots.pdf

Literature Links

- **Primary:** *The Carrot Seed* by Ruth Kraus (available in Spanish), *Carrot Soup* by John Segal, *Curious George, The Perfect Carrot* by Marcy Goldberg Sacks, *The Giant Carrot* by Jan Peck, *Just Enough Carrots* by Stuart Murphy, *The Life Cycle of a Carrot* by Linda Tagliaferro, and *Tops and Bottoms* by Janet Stevens.

For more ideas, visit:

www.cfaitc.org/books



This material was produced by the California Department of Public Health’s *Network for a Healthy California* with funding from USDA SNAP, known in California as *CalFresh* (formerly Food Stamps). These institutions are equal opportunity providers and employers. *CalFresh* provides assistance to low-income households and can help buy nutritious foods for better health. For *CalFresh* information, call 1-877-847-3663. For important nutrition information, visit www.cachampionsforchange.net. © 2011

