

Harvest of the Month



Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

There is no shortage of fruits and vegetables in California – even in winter. Students need at least 2½ - 6½ cups of fruits and vegetables every day. All forms count toward their daily needs – fresh, frozen, canned, dried, and 100% juice. Studies show that students who eat more fruits and vegetables perform better in school. Remind school nutrition staff, parents, and students that there are many ways to eat the recommended number of cups each day. Use *Harvest of the Month* to help students add more fruits and vegetables into meals and snacks and be more active every day.

Exploring California Grapefruit: Taste Testing

Getting Started:

- Find a local citrus grower or retail store to donate fruit for taste tests.
- Review *Taste Testing* and *Classroom Cooking Tips*.*

What You Will Need (per group):

- 1 pink and/or red grapefruit; 1 white/yellow grapefruit; 1 cup 100% grapefruit juice
- Small paper cups (for grapefruit juice) and napkins
- Printed Nutrition Facts labels for grapefruit and grapefruit juice*

Activity:

- Explore the look, feel, and smell of each grapefruit and juice. Make a sensory chart and record observations.
- Peel and section fruit. Pour juice evenly into cups.
- Taste and compare each. Record observations and discuss as a class.
- Review Nutrition Facts labels. Discuss similarities and differences. Is the fruit or juice an excellent source of any nutrient (provides more than 20% of Daily Value)? Complete *Student Sleuths #1* (page 3) for follow-up activity.
- Take a class poll of students' preferences for each variety. Create a graph of the results and share with school nutrition staff.

*Download from www.harvestofthemoth.com.

For more ideas, reference:

Kids Cook Farm-Fresh Food, CDE, 2002.



Nutrition Facts

Serving Size: ½ medium grapefruit (123g)
Calories 46 Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 12g	4%
Dietary Fiber 1g	5%
Sugars 9g	
Protein 1g	
Vitamin A 6%	Calcium 1%
Vitamin C 78%	Iron 1%

Cooking in Class: Breakfast Fruit Cup

Ingredients:

Makes 32 tastes at ¼ cup each

- 4 large pink or red grapefruit
- 4 medium bananas, peeled and sliced
- ¼ cup raisins
- 1½ cups lowfat vanilla yogurt
- 2 teaspoons ground cinnamon
- Small paper cups and spoons

- Peel grapefruit and remove seeds. Slice into bite-size pieces.
- In large bowl, combine fruit.
- Divide fruit into cups. Top each with a spoonful of yogurt.
- Sprinkle with cinnamon and serve.

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

For nutrition information, visit: www.harvestofthemoth.com

Reasons to Eat Grapefruit

A half of a medium grapefruit is:

- An excellent source of vitamin C.
- A source of many other nutrients, such as potassium, folate, thiamin, vitamin A, vitamin B₆, and fiber.
- Low in calories.*

*Learn about calories on page 2.

For information, visit:

www.nal.usda.gov/fnic/foodcomp/search



GRAPEFRUIT

What Are Calories?

- Calories measure the energy found in food.
- The body needs energy to function, which is why food is necessary for life.
- Our bodies burn calories found in carbohydrates, proteins, and fats for energy. These nutrients are released from food during digestion, then absorbed into the bloodstream, and converted to glucose, or blood sugar.
- One pound of body fat is equivalent to 3,500 calories.
- The body is very efficient in storing energy. The main form of stored energy is body fat. A small amount of carbohydrates is stored in the liver and muscles in the form of glycogen. Glycogen is then converted to glucose and is used by the body for energy.

Sources:

www.eatright.org

<http://jn.nutrition.org/nutinfo>

How Much Do I Need?

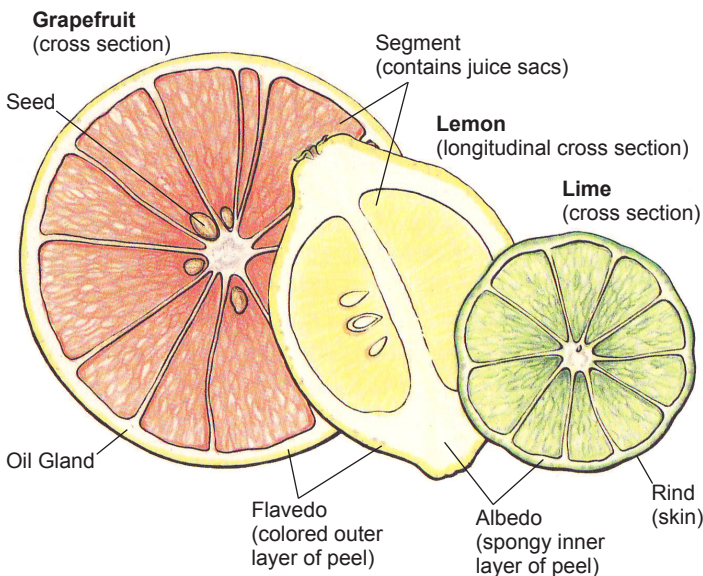
Half of a medium grapefruit is about ½ cup of fruit. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. Look at the chart below and have students determine how many cups they need to eat each day. As a class, have students write down their goals and how they plan to eat the recommended daily amounts and 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.



Source: *Tall and Tasty: Fruit Trees* by Meredith Sayles Hughes, Lerner Publications Company, 2000.

Botanical Facts

Pronunciation: 'grāp-,früt

Spanish name: toronja

Family: Rutaceae

Genus: *Citrus*

Species: *Citrus x paradisi*



Botanists believe grapefruit was an accidental hybrid of the two primal citrus species, *Citrus maxima* (pummelo) and *Citrus sinensis* (sweet orange). Citrus is a subtropical plant and, like all citrus fruit, grapefruit grow on flowering, evergreen trees. They are distinguishable by the way in which they grow in clusters – like grapes – on trees. They are also one of the largest citrus and have an oblate shape (round with flat spheres).*

There are more than 20 varieties of grapefruit grown in the United States. They are commonly grouped into three cultivars determined by the fruit's pulp color: white/yellow, pink, and red. The color is a result of the fruit's genetic makeup, skin pigmentation, and ripeness. The flesh is more acidic than other sweeter citrus varieties, though the pink- and red-pulped varieties have been produced with less acidity.

White/yellow varieties	Duncan, Marsh, Melogold, Oroblanco
Pink varieties	Chandler, Foster, Thomson
Red varieties	Ruby Red, Rio Red, Flame

*Refer to *Oranges* and *Mandarins* newsletters for more information about citrus fruit.

For more information, visit:

www.cfaitc.org

www.ccpp.ucr.edu/variety/grapefruits.html

How Does Grapefruit Grow?

Grapefruit trees are well-suited for warm, subtropical climates. California's climate, fertile soil, and diverse land resources allow for year-round production of many citrus varieties, including grapefruit. Grapefruit can grow on a range of soil types from clay to alkaline to acidic soils, but do best in soils that are a mixture of clay, silt, and sand.

Grapefruit trees grow from 30 to 50 feet tall. Growers may prune trees to limit the height to 15 to 25 feet for easier harvesting. The trees produce four-petaled, white flowers. Temperature affects the length of time it takes from flower blossom to fruit maturity. For example, in the cooler area of Riverside, it can take up to 13 months. In the desert area of the Imperial Valley, it takes about eight months. Grapefruit are picked when fully ripe. Citrus trees never go dormant, but their root systems become inactive when ground temperatures drop below 50 F. Drought conditions can have the same impact.

Helpful Hint:

For information about how citrus trees grow, refer to the *Oranges* and *Mandarins* newsletters or *Grapefruit Botanical Image* on www.harvestofthemoth.com.

For more information, reference:

Tall and Tasty: Fruit Trees by Meredith Sayles Hughes, Lerner Publications Company, 2000.

School Garden: Growing Partnerships

Ask wholesale or local nurseries to partner with your school. Ask them to:

- Donate supplies, equipment, or seeds.
- Host a class field trip and demonstrate seasonal tasks for agricultural crops, like citrus.
- Present to class in school garden (or at nursery) about edible landscaping and gardening tips.
- Offer mentorships or training positions to older students.
- Display students' fact sheets on how plants grow.*
- Distribute the community newsletters to customers.**

*Refer to *Student Sleuths* #3 for making fact sheets.

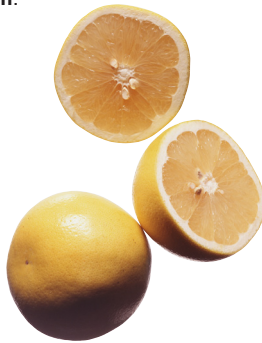
**Download from www.harvestofthemonth.com.

For basic gardening tips, visit:

<http://gardening.wsu.edu/text/lsbasic.htm>

Home Grown Facts

- The United States is the world's leading grower of grapefruit.
- California is the nation's second leading producer (behind Florida) of both citrus and grapefruit.
- California grown grapefruit is available year-round while other states' supplies are seasonal.
- Nearly all of California's grapefruit supply (88%) is sold as fresh produce.
- Riverside, Tulare, Imperial, and San Diego counties produce over 90% of all grapefruit in California.



Activity:

- Research how snails and slugs can devastate citrus crops. What methods do growers use to control them?
- Select two different citrus growing regions in the world: one in the United States and one in a foreign country. Compare and contrast the climates, land, and growing methods.

For more information, visit:

www.cdffa.ca.gov

www.cfaitc.org

A Slice of Grapefruit History

- The first citrus trees grew in Asia over 4,000 years ago.
- An accidental hybrid, the first grapefruit was produced in the West Indies (Caribbean) in the mid-1700s. It was often called the "forbidden fruit."
- The first American grapefruit seedlings grew in Florida around 1823. For many years, it was grown as a novelty for tourists.
- The Ruby Red grapefruit was also an accidental discovery by Texas citrus growers in 1929. It was the first grapefruit variety to receive a United States patent.

Activity:

- Have students research and develop a history timeline of other citrus varieties such as pummelos, lemons, or limes.

For more information, visit:

www.hort.purdue.edu/newcrop/morton/grapefruit.html

www.texasweet.com/About-Texas-Citrus/Texas-Grapefruit-History

Student Champions

California grown citrus are in peak season in winter, but most varieties are available year-round. Citrus can be consumed fresh, canned, or as 100% juice, and with any meal. All citrus provide an excellent source of vitamin C and a source of many other essential vitamins and minerals.

Student Activity:

- Find or create a healthy recipe that uses at least one citrus variety for each of these meal categories: breakfast, lunch, dinner, snack.
- Conduct a nutrient analysis of recipe. If recipe is unhealthy, find substitutions to improve the nutrition. These are a few key criteria*:
 - Total fat is equal to or less than 35% of total calories.
 - Each serving contains less than 600 mg of sodium.
 - Added sugars may not exceed 15% of total calories.
 - Each serving must contain at least a ½ cup of fruit or vegetable (or 1 cup leafy greens, ¼ cup dried fruit, or ½ cup 100% juice) per 250 calories.
- Compile recipes with classmates to create a Citrus Cookbook. Include the nutrition information for each recipe and Nutrition Facts labels for each citrus variety.**
- Share cookbook with family members, school nutrition staff, retail stores, or use for fund-raisers.

*Excerpted from CDC's recipe criteria guidelines.

**Download labels from www.harvestofthemonth.com.

Student Sleuths

- 1 Use Nutrition Facts labels from *Taste Testing* activity (page 1). Find nutrient information for at least three other citrus varieties like lemons, limes, and kumquats. (Hint: Use similar serving sizes.) Choose five nutrients (e.g., vitamin C, vitamin A, calcium, fiber, potassium). Make bar graphs to compare all varieties.
- 2 Compare Nutrition Facts labels for 100% grapefruit juice and another juice drink. (Hint: Use similar serving sizes.) Describe the nutrient differences. Make a list of the ingredients in both. Do an activity to demonstrate the difference in teaspoons of added sugar for a juice drink.
- 3 Create fact sheet cards of how citrus trees grow. Include important growing information: soil type, climate, irrigation, propagation, planting, harvesting, and amount of time to bear fruit. Display on index cards with a drawing of fruit tree on one side and growing information on opposite side. Share fact sheet cards with local nurseries.*

*Refer to *School Garden* activity above for information.

For information, visit:

www.nal.usda.gov/fnic/foodcomp/search

www.eatright.org/ada/files/Juice.pdf

www.hort.purdue.edu/newcrop/morton/grapefruit.html



Adventurous Activities

Science Investigation

- Research and write a report on how seedless citrus fruit trees are reproduced. Include information such as how and when this reproduction process evolved. Describe the benefits and problems of producing seedless citrus fruit trees, including benefits or problems for consumers.

Social Studies

- From 2005-2006, grapefruit exports increased 76% and became one of California's top 20 agricultural exports. Hypothesize why this happened. Then, research why it occurred and find out if grapefruit continues to be one of California's top exports.

Adapted from: www.cfaitec.org/Commodity/pdf/CitrusFruits.pdf

For more ideas, visit:

www.harvestofthemonth.com

Cafeteria Connections & Literature Links

Collaborate with the library and cafeteria to conduct a slogan contest to promote citrus fruits.

- Select theme for a promotional contest. Example: How is citrus good for you?
- Display different citrus varieties at tables in cafeteria and library. Provide taste samples to students in cafeteria. Feature many varieties like oranges, grapefruit, mandarins, kumquats, pummelos, lemons, and limes.
- Make a poster display where students can vote for their favorite variety.
- Set up a display in cafeteria with books from library and nutrition information about citrus varieties. Print and post CDE's Nutrient Graphs.*
- Have blank "bookmarks" (2x6" plain cardstock) at book table for students to submit creative citrus slogans. Encourage use of artwork.
- Announce winning slogan(s) during lunch or school assembly. Convert bookmark to a full-size poster and display on campus.
- Laminate all bookmarks and keep in the library for student use.

*Download from www.harvestofthemonth.com.

Helpful Hint:

For an annotated list of agriculture-related books, download a free copy of the Teacher Resource Guide from www.cfaitec.org. Developed by California Foundation for Agriculture in the Classroom, this guide also includes field trip ideas, agricultural Web sites, resources, and grant lists.

Physical Activity Corner

Physical activity is a game, sport, exercise, or other action that involves moving the body, especially if it makes the heart beat faster. Have a class discussion about what counts as physical activity and why students should get at least 60 minutes of activity every day.



Activity:

- Create a physical activity journal. Make a daily chart for logging minutes: before school, during school, after school, and total minutes.
- Log physical activity minutes each day for one full week and list what you did. (Ex: 15 minutes, walk to school)
- Compare results with classmates.
- Which activities did you do the most?
- Which activities would you like to try?
- If average daily physical activity time is below 60 minutes, set a goal to reach 60 minutes. Write down five ways to get more activity.
- If average daily time is at or above 60 minutes, write down five ways to maintain or increase activity.
- Repeat journal tracking for three additional weeks to meet goals.

Adapted from: *School Idea & Resource Kit, Network for a Healthy California—Children's Power Play! Campaign, 2009.*

For more ideas, visit:

www.networkforahealthycalifornia.net/powerplay
www.catchinfo.org

Just the Facts

- Grapefruit was named by a Jamaican farmer who noticed the way it grows in clusters – like grapes – on a tree. Grapefruit has grown in clusters with as many as 25 fruits.
- Grapefruit's flavor and juiciness are not determined by color, but by the lateness of the season when they are harvested, the specific variety, and how the fruit is handled.
- Florida grown grapefruit have a thinner rind and are typically juicier and less pulpy than California grown grapefruit, which are easier to peel and segment.
- In the 1930s, the Hollywood Diet or "Grapefruit Diet" became a popular fad that guaranteed a loss of "10 pounds in 10 days" by eating half of a grapefruit before each meal. The grapefruit was said to have fat-burning enzymes, but no such enzymes exist.

For more information, visit:

www.fruitsandveggiesmatter.gov/month/grapefruit.html



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