Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

School is a place where children develop many lifelong habits and preferences. Studies have shown that school-based nutrition education promoting healthful eating and physical activity can improve academic performance. *Harvest of the Month* supports academic content standards and gives 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 Grapes: Taste Testing

What You Will Need (per group of 6-8 students):

- 1 small bunch each of red, green, and blue/black varieties of seedless California grapes*
- Enough bunches to allow students to try each variety
- Graph paper and colored pencils

*See *Botanical Facts* (page 2) for varieties.

Activity:

- Make three columns on graph paper labeled red, green, and blue/black; make five rows labeled appearance, texture, sound, smell, and flavor.
- Taste red grape variety and describe in appropriate column and row.
- Repeat activity for green and blue/black varieties.
- Compare and contrast the three grape varieties; discuss as a class.
- Discuss the factors that contribute to the different characteristics in each variety (e.g., environment, harvest time, climate).
- Take a poll to determine the students' favorite grape variety.

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: Grape Tea Sandwich

Makes 36 servings at ¼ sandwich per serving

Ingredients:

- 1 pound red grapes, washed, halved
- 1 (8-ounce) container lowfat cream cheese
- 18 slices whole wheat bread
- Paper plates and napkins

1. Lightly spread 2 teaspoons of cream cheese on each slice of bread.
2. Place eight grape halves on top of the cream cheese for each slice of bread.
3. Put sandwiches together and slice into quarters.
4. Serve immediately.

Nutrition information per serving:
Calories 56, Carbohydrate 9 g, Dietary Fiber 1 g, Protein 2 g, Total Fat 1 g, Saturated Fat 1 g, Trans Fat 0 g, Cholesterol 3 mg, Sodium 96 mg

Adapted from: *Tasting Trio Team, Network for a Healthy California,* 2010.

For more ideas, reference:
Kids Cook Farm-Fresh Food, CDE, 2002.

Reasons to Eat Grapes

A ½ cup of red or green grapes is:

- A good source of vitamin C and vitamin K.
- A source of carbohydrates, mostly in the form of simple sugars*.

*Learn about sugars on page 2.

Champion Sources of Vitamin C*:

- Bell peppers
- Berries
- Broccoli
- Green beans
- Leafy greens
- Melons
- Potatoes

*Champion sources provide a good or excellent source of vitamin C (at least 10% Daily Value).

For more information, visit:
www.nal.usda.gov/fnic/foodcomp/search/
(NDB No.: 09132)

Nutrition Facts

Serving Size: ½ cup grapes (76g)
Calories 52 Calories from Fat 0

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 14g	5%
Dietary Fiber 1g	3%
Sugars 12g	
Protein 1g	

Vitamin A 1% Calcium 1%
Vitamin C 14% Iron 2%

GRAPES

What Are Sugars?

- Sugars are classified as simple or complex carbohydrates. This depends on their chemical structure and how quickly the body breaks them down and absorbs them. Simple sugars break down faster.
- Carbohydrates are the body's main source of energy.
- An enzyme called amylase works to break down carbohydrates into glucose (blood sugar); this is what our bodies use for energy.
- Simple carbohydrates provide quick energy and are found naturally in foods like fruits, vegetables, and milk.
- Some simple carbohydrates, such as white or brown sugar, high fructose corn syrup, molasses, or honey, are often added to foods.
- One gram of carbohydrate – simple or complex – has four calories.
- Carbohydrates deliver vitamins, minerals, fiber, and a host of important phytochemicals to the body.

For more information, visit:
www.nlm.nih.gov/medlineplus/ency/article/002469.htm

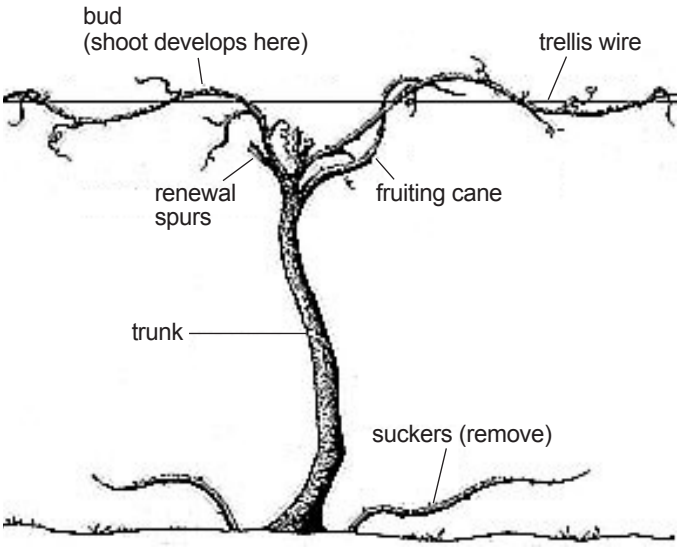
How Much Do I Need?

A ½ cup of grapes is about one cupped handful. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. All forms count toward the daily amount – fresh, frozen, canned, and dried. Remind students of their goals to eat a variety of colorful fruits and vegetables and get at least 60 minutes of physical activity every day.

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.



Download botanical image from **www.harvestofthemonth.com**.

Source: http://pods.dasnr.okstate.edu

Botanical Facts

Pronunciation: grāp
Spanish name: uva
Family: Vitaceae
Genus: *Vitis*
Species: *V. labrusca*

Grapes are the fruit of the vine in the family Vitaceae. The word *grape* was derived from the Old French term *grap,* meaning bunch or cluster, and is also the term for a long hook used to harvest these clustered fruits. *Vitis labrusca* is the most common species, known mainly as table grapes, and can be found in North America. In addition to being used for food products and juice, *V. labrusca* is used in the production of wine. *V. vinifera* was also the first Old World species to be planted in California in the late 18th century.

Grape color	*V. labrusca* varieties
Red	Flame Seedless, Red Globe, Ruby Seedless, Christmas Rose, Emperor, Rouge, Crimson Seedless
Green	Perlette, Sugarone, Thompson Seedless, Calmeria
Blue/black	Beauty Seedless, Autumn Royal, Ribier, Fantasy Seedless, Marroo Seedless, Niabell

For more information, visit:
www.uga.edu/fruit/grape.html

How Do Grapes Grow?

Grapes grow on climbing, woody vines. Grapes can be grown in most temperate climates, but thrive in tropical and subtropical regions with average annual temperatures above 50 F. Grapevines are grown from cuttings or grafted onto existing rootstocks. The vines need to grow two years before the first grapes are ready to harvest. As they grow, the vines need to be supported on trellises.

Grape growing, or viticulture, is a year-round job beginning with pruning in the winter. In early spring, growers "girdle" the vines, meaning they strip a small ring of bark from the trunk to force nutrients to the vine roots, resulting in larger berries. The third stage is called "bud break," followed by a burst in leaf growth. In the fourth stage, branches, or caneshoots, grow rapidly and flower clusters emerge. In the final stage, blooming occurs when temperatures reach at least 68 F and young "berries" (grapes) appear in place of flowers and ripen into clusters.

Like most fruit, grapes develop sugar as they ripen, but they neither ripen nor sweeten after being harvested. Harvested by hand, grape bunches are trimmed, inspected, packed into shipping containers, and then transported to a cold storage facility for cooling. Grapes are not immediately shipped to market, but maintained in a controlled climate storage facility.

For more information, visit:
www.freshcaliforniagrapes.com

School Garden: Solar Cooker

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.

Fruits and vegetables need the sun's energy to grow. Have students explore ways in which the sun helps people through solar energy. The sun can help cook a meal, dry clothes, dry fruits and vegetables, make fruit leather, and even heat water.

What You Will Need:

- Poster board (will need to trim)
- Foil
- Shoe box
- Wire hanger, straightened

How to Make a Solar Cooker:

- Cover poster board with foil.
- Roll into a U-shape and place in shoe box.
- Insert straightened hanger through box like a skewer.

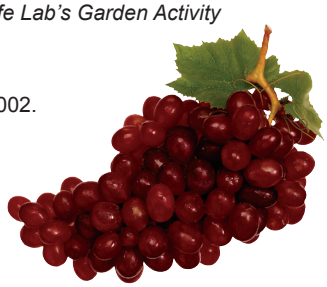
Experimenting With a Solar Cooker:

Note: Must be a warm, sunny day.

- Spear a piece of food (preferably a fruit or vegetable).
- Take cooker outside and aim at the sun.
- See how hot the piece of food gets and if it cooks.
- If cooked, note the temperature and time it took.

Adapted from: *Gardening Tips from Life Lab's Garden Activity Calendar,* **www.lifelab.org**

For more ideas, reference:
A Child's Garden of Standards, CDE, 2002.



Just the Facts

- Grapes are actually berries.
- On average, there are over 100 grapes in a bunch.
- Americans today eat about eight pounds of grapes annually, up from 2.5 pounds in 1970*.
- Concord grapes are one of only three fruits native to North America.
- Grapes are about 80% water.

*2008 Data

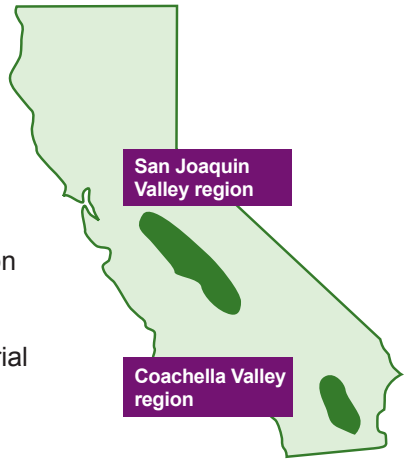
Student Sleuths

1. Where are most phytochemicals found in grapes?
2. Name three health benefits of iron. What happens if you consume too much iron? Too little?
3. There are two different descriptions of sugars. How are they classified? Why are they different?
4. What does the color of a grape's skin indicate about the environment where it was grown?
5. Map the origin of grapes and the various geographical regions in California where grapes are grown.
6. List the different uses (e.g., fresh, juice, dried) for which grapes are harvested in California. Rank them in order of use from greatest to least use.

For information, visit:
www.fruitsandveggiesmatter.gov/month/grapes.html
www.ipmcenters.org/cropprofiles/docs/cagrapes-table.html
www.fas.usda.gov/htp/horticulture/grapes.html

Home Grown Facts

- Ninety-seven percent of the grapes consumed in the United States are grown in California.
- Currently there are more than 50 varieties of table grapes grown in California, 18 of which are considered major varieties. Thompson Seedless and Flame Seedless are the two dominant varieties produced in California, followed by Red Globe, Ruby Seedless, Crimson Seedless, and Perlette.
- Grapes are the number two ranked commodity in California, following dairy production.
- Nearly 80% of California's table grapes are sold as fresh, while the remainder are processed.
- Most of California's table grape production is in the southern San Joaquin Valley region, with the Coachella Valley region accounting for the bulk of the remaining production.
- Major grape-producing counties include Kern, Tulare, Riverside, and Fresno. Smaller production occurs in Madera, San Joaquin, San Bernardino, Kings, Merced, and Imperial counties.



For more information, visit:
www.freshcaliforniagrapes.com

A Bunch of Grape History

Grapes are one of the oldest cultivated fruits dating back to about 8,000 years ago. Hieroglyphics show that Egyptians were involved in grape and wine production, and the early Romans were known to have developed many varieties.

Grapes have been grown in California for more than 200 years. The tradition of viticulture began in 1769 when Spanish friars established missions throughout the region. Padres planted a European grape variety known as the "Mission" in order to make sacramental wine. Native American wild grapes of the variety *Vitis girdiana* grew along California stream banks, but these grapes were sour and of little use for winemaking.

In California, grapes planted for fresh consumption began in the early 1800s when settlers recognized the untapped agricultural possibilities of the then-Mexican territory. William Wolfskill, a former trapper (and also founder of California's citrus industry) planted the first table grape vineyard in 1839 near present-day Los Angeles.

By the 1850s, the United States had officially acquired California from Mexico and 80,000 gold prospectors had moved to the region, a few of them recognizing that grapes were an important commodity in which to invest. Today, California wine, table grapes, and raisins are all important agricultural commodities.

For more information, visit:
www.freshcaliforniagrapes.com

Adventurous Activities

Science Investigation:

Objective: Explore the effects of water loss in fruits
Materials: Raisins and fresh fruits including grapes, apricots, apple slices; large paper bags

Getting Started:

- Discuss how raisins are dried grapes; ask students to note the differences between the two.
- Ask why raisins are smaller in size than grapes.
- Discuss how living things are made up of cells and how each cell contains water.

Activity:

- Cut open a paper bag and lay flat.
- Spread fresh pieces of fruit on bag.
- Place bag in full sunlight (no shade).
- Trace around each piece of fruit.
- Record the date and observations about each piece of fruit (e.g., size, shape, color, texture).
- Check fruits and record observations every other day.
- At end of two weeks, compare the differences in size, appearance, smell, and texture. Draw conclusions about how this process happens and why.

Adapted from: www.dole5aday.com/Teachers/T_Index.jsp

For more ideas, visit:
www.freshcaliforniagrapes.com/lessonplans.php

Student Champions

Since 1970, Americans' annual consumption of table grapes has grown from two pounds to more than eight pounds. Many factors contributed to this rise, including improved marketing techniques. Marketing today relies heavily on research, including customer surveys and taste tests. Have students conduct a survey of what type of grapes their classmates prefer, analyze the results, and produce a magazine advertisement to sell grapes. Work with your school's newspaper or the PTA to place the ad in their next publication. Or, have students work with a local retailer to promote grapes in their stores.

For more ideas, visit:
www.cfaitc.org/factsheets/pdf/TableGrapes.pdf

Physical Activity Corner

Being active, in addition to eating healthy, can improve the way students perform in the classroom.

Grape Tag:

Designate a playing area large enough for students to run safely.

- Ask for two volunteers and assign both of them to be "it." They link elbows to become a bunch of grapes, or the "Grape Bunch."
- When play begins, the Grape Bunch moves, keeping elbows linked, trying to tag the rest of the students, who are "loose grapes."
- When students get tagged, they link elbows and become part of the Grape Bunch.
- Once four students are tagged, the Grape Bunch separates into two separate bunches (two players detach creating two separate Grape Bunches).
- Play continues until all students are part of a Grape Bunch.

Source: Physical Activity Specialist, Northcoast Region, *Network for a Healthy California,* 2011.

For more ideas, visit:
www.kidsfitnesschallenge.com

Cafeteria Connections

School nutrition staff can support your nutrition education efforts. Adults working together, providing the same healthy messages, sends a powerful message to students. Invite school nutrition staff to:

- Talk with students about the school meal program.
- Describe proper food safety and handling techniques during a classroom cooking activity.
- Have an open discussion with students about the importance of nutrition to help reinforce the messages they receive in the classroom.

For more ideas, reference:
Fruits and Vegetables Galore, USDA, 2004.

Literature Links

- **Elementary:** *California Grapes* by Karen Adler, *Making Raisins* by Marvin Buckley, and *Table Grapes* by the California Table Group Commission (K-12).
- **Secondary:** *Agriculture and Environment,* American Farm Bureau Foundation for Agriculture, *The Vineyard* by Idwal Jones, and *Table Grapes* by the California Table Group Commission (K-12).

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.

CDPH California Department of PublicHealth

CHAMPIONS for CHANGE
Network for a Healthy California