Harvest of the Month

Network for a Healthy California

Health and Learning Success Go Hand-In-Hand

Nearly half of all school-aged children fall short in consuming many of the key micronutrients their bodies need for healthy growth and development. Fruits and vegetables are sources of many of these micronutrients. Support your students in developing healthy behaviors with *Harvest of the Month.* Teach them about the benefits of eating a variety of colorful fruits and vegetables and getting at least 60 minutes of physical activity every day.

Exploring California Dried Fruit: Taste Testing

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

- Minimum of four different dried fruit varieties (e.g., raisins, figs, dates, plums, apricots, apples, currants)
- One cup of each dried fruit variety per student group
- Paper and pencils

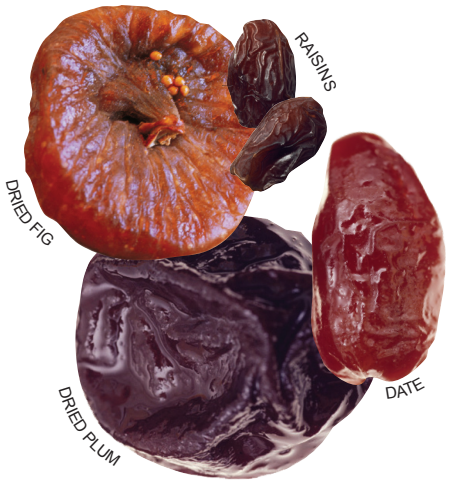
Optional: Fresh fruit samples of selected dried fruit

Activity:

- Observe, feel, smell, and taste each dried fruit.
- Record observations of different colors, textures, shapes, smells, and tastes.
- Discuss similarities and differences among varieties.
- Discuss seasonal availability of fresh versus dried fruit; identify advantages of dried fruit.
- Poll students to determine preference for fresh or dried variety of each fruit. Chart results on board and determine class favorite(s). Share results with school nutrition staff.

Optional: Compare and contrast dried versus fresh fruit using a Venn diagram.

For more ideas, reference:
School Idea & Resource Kit, Network for a Healthy California – Children's Power Play! Campaign, 2005.



Nutrition Facts

Serving Size: ¼ cup dried plums (44g)
Calories 104 Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 28g	9%
Dietary Fiber 3g	12%
Sugars 17g	
Protein 1g	

Vitamin A 7% Calcium 2%
Vitamin C 1% Iron 2%

Cooking in Class: Trail Mix

Makes 32 tastes at 6 tablespoons each

Ingredients:

- 4 cups dried fruits (at least 4 varieties*)
- 1½ cups mixed nuts
- 4 cups small pretzels
- 2½ cups whole grain cereal
- 4 tablespoons (for measurement)
- Bowls (to hold ingredients)
- Small bowls and spoons
- Paper and pencils

1. Set up ingredients on large table.
2. Let students make their own trail mix using the tablespoon measures.
3. Have them record what and how much of each ingredient they use in their recipe.

**Examples: raisins, apricots, apples, cranberries, cherries*

Nutrition information per serving:
Calories 107, Carbohydrate 18 g, Dietary Fiber 2 g, Protein 2 g, Total Fat 4 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 0 mg, Sodium 129 mg

Source: CDE, 2006.

For more ideas, visit:
www.cachampionsforchange.net

Reasons to Eat Dried Fruit

- A ¼ cup of dried plums is a good source of fiber and a source of potassium, magnesium, riboflavin, and vitamin A.
- A ¼ cup of chopped dates is a good source of fiber and a source of potassium.
- A ¼ cup of dried figs is a good source of fiber and a source of calcium, magnesium, potassium, and vitamin K.
- A ¼ cup of raisins is a source of fiber and potassium.

Champion Sources of Potassium*:

- Avocados
- Beans (green, kidney, lentils, lima, pinto, soy)
- Kiwifruit
- Papayas
- Spinach
- Swiss chard
- Winter squash

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

For more information, visit:
www.nal.usda.gov/fnic/foodcomp/search/
(NDB No.: 09087, 09094, 09291, 09298)

DRIED FRUIT

What Is Potassium?

- Potassium is a mineral that helps your brain tell your muscles when to move.
- Potassium also helps keep a healthy blood pressure and helps the body use the energy found in carbohydrates.
- It is also an electrolyte, a substance that conducts electrical impulses in the body.
- Critical to heart function, potassium also plays a key role in skeletal and smooth muscle contraction, making it important for normal digestive and muscular function.
- Many foods contain potassium, including all meats, some types of fish (e.g., salmon, cod, flounder), and many fruits, vegetables, and legumes.

For more information, visit:
www.heart.org/HEARTORG/GettingHealthy/GettingHealthy_UCM_001078_SubHomePage.jsp
http://lpi.oregonstate.edu/infocenter/minerals/potassium/

How Much Do I Need?

A ¼ cup of dried fruit is about half of one cupped handful. The amount of fruits and vegetables that each person needs depends on age, gender, and physical activity level. Students need to get at least 60 minutes of physical activity every day. Have students find out how many cups of fruits and vegetables they need to eat every day. Have them write down ways they can add fruits and vegetables to their meals and snacks to help them reach their goal.

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.

How Do Fruits Dry?

Fruits become dry when their moisture content drops below 20 percent. Dried fruit is the result of either natural or mechanical processes. California's grape growers happened upon raisins accidentally when an early heat wave dried the grapes on the vine. California plums, by comparison, are dehydrated by machines that lower the moisture content to about 15 percent*.

California has strict standards for dried fruit crops that involve sampling, washing, sizing, and processing. Dried fruit is often treated with potassium sorbate to inhibit yeast and mold growth; sulfur dioxide is also added to preserve color. Before being sent to market, most dried fruit undergoes a process — usually by boiling or steaming — to bring their moisture content up to about 30 percent. This added moisture usually makes the fruit more plump and tasty.

Fruit	Drying Process	Fruit Yield (Per Tree/Vine Per Season)
Dates	Ripen in three stages (khalal, rutab, and tamar); hand harvested when tree-ripe, then mechanically dried	200 lbs.
Figs	Fully-ripen and semi-dry on tree	40-50 lbs.
Plums	Mechanically harvested, then mechanically dried	150-300 lbs.
Raisins (Grapes)	Hand harvested when vine-ripened, then sun-dried**	Varies

*Not all plum varieties can be dried; the California plum variety is unique. See *Adventurous Activities* (page 4) to learn more.
**Most raisin varieties are sun-dried. The golden seedless raisin varieties are mechanically dried.

For more information, visit:
www.californiadriedplums.org
www.californiafigs.com
www.calraisins.org
www.datesaregreat.com

Botanical Facts

	Date	Dried Fig	Dried Plum	Raisin
Spanish	dátile	higo	ciruela pasa	pasa
Family	Arecaceae (Palm)	Moraceae (Mulberry)	Rosaceae (Rose)	Vitaceae (Grape)
Genus	*Phoenix*	*Ficus*	*Prunus*	*Vitis*
Species	*Phoenix dactylifera*	*Ficus carica*	*Prunus domestica*	*Vitis vinifera*
Varieties	Deglet Noor, Medjool, Zahidi, Khadrawy, Halawy; also grouped as soft, semi-soft and dry	Calimyrna and common type (Mission, Adriatic, Kadota)	California plum (graft of La Petite d'Agen and wild American plum), Improved French, Sutter, Tulare Giant	Dark/purple raisin, golden raisin, dipped seedless, Muscat, Zante currant

Mulching the Garden

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.

As the rain season begins in California, help your school garden with a layer of mulch. Mulching is the process of spreading material on garden paths and around plants and trees. It helps stop weeds, erosion, and mud. As mulch decomposes, it breaks down into organic material that feeds the soil.

Helpful Hints:

- Free sources of mulch include tree trimmers, farmers, local waste districts or the California Materials Exchange (**www.ciwmb.ca.gov/calmax**).
- Talk to a local farmer, nursery, or your partners to see about getting mulch donated.
- Weed paths and garden beds before laying down mulch.
- Most mulch is made from organic by-products (bark chips, wood chips, composted leaves, straw, newspaper, cardboard).
- Lay mulch down in layers two to four inches thick.
- If mulch decomposes before summer, add another layer around plants to help retain soil moisture.

Source: www.lifelab.org

For more information, visit:
www.csgn.org
www.garden.org

Home Grown Facts

- Ninety-five percent of the 30 million pounds of dates grown in the United States come from the Coachella and Salt River Valleys in Southern California.
- The Deglet Noor variety accounts for 90% of California's date crop.
- California's San Joaquin Valley grows 20% of the world's figs and 99% of the nation's fig crop.
- Two-thirds of California's fig crop consists of the Mission (black) and Calimyrna (golden) varieties.
- The top three fig-producing counties are Fresno, Madera, and Merced.
- California is the world's leader of dried plums, producing about 65% of the world's supply and almost 99% of the nation's supply.
- The top dried plum-producing counties are Sutter, Butte, Yuba, Tehama, Glenn, and Tulare.
- In the United States, raisins are produced almost exclusively in California's Central Valley (mostly in Fresno County), providing nearly half of the world's supply.
- Ninety percent of raisin production comes from the Thompson seedless grape variety.

For more information, visit:
www.ers.usda.gov
www.cdfa.ca.gov

Student Sleuths

1. Dates, dried plums, dried figs, and raisins all provide a source of fiber. What are the benefits of consuming fiber? What is the difference between soluble and insoluble fiber?
2. Complete a nutrient analysis of your trail mix recipe (from *Cooking in Class* activity on page 1). Develop a Nutrition Facts label for your product. (Hint: Use the analysis tools available on **www.nutritiondata.com**.)
3. The standard portion size for fruits and vegetables (fresh, frozen, or canned) is one-half cup. For dried fruit, it is one-quarter cup. Why do you think it is different for dried fruit?
4. What is potassium and what does it do for the body? When playing sports, what other minerals are needed for hydration? Develop an advertisement for dried fruit promoting the benefits of potassium.
5. What is a *Blastophaga psenes*? What is its role in the propagation of figs? Describe the pollination process called caprification.
6. Develop a Venn diagram to compare and contrast various characteristics of grapes and raisins, including nutrient values. Give a presentation that explains the changes in nutrient composition when grapes are dried.

For information, visit:
www.datesaregreat.com
www.fruitsandveggiesmatter.gov
www.calraisins.org
www.tablegrape.com

Student Champions

- Dried fruit varieties are rich with unusual and interesting facts from history. Have students develop a poster or student worksheet with brain teasers, clues, or fill-in-the-blanks about the "Ancient History of Dried Fruit."

  Example:
  - In the 14th century, Roman physicians prescribed what dried fruit to cure mushroom poisoning and old age? (Hint: Find answer in *Dried Fruit History* on page 4.)
- Have students add messages promoting the health benefits of eating dried fruit. Display posters on campus or distribute to local grocery stores.
- In lieu of posters, students may develop advertising jingles to promote a dried fruit, such as figs or dates. Talk to officials to see if the "ads" can be played during school announcements.

Physical Activity Corner

Teach students about the benefits of warming up the body before exercising. In addition to raising core body temperature and making muscles more flexible, warming up can also help the body work more efficiently, prevent injury, and stimulate brain activity. Have a class discussion about the importance of warming up before starting a physical activity. Then do a few warm-up exercises together*. Remind students that warming up can count toward their 60 minutes of physical activity every day.

Sample Warm-Up Exercises:

- Head circles
- Arm raises
- Trunk twist
- Knees up (marching)
- Low squat

*Warming up can be done indoors and outdoors.

Adapted from: *Community Youth Organization Idea & Resource Kit, Network for a Healthy California – Children's Power Play! Campaign,* California Department of Health Services, 2005, p. 23.

Adventurous Activities

Geography Exploration:

California leads the nation in total fruit and vegetable production. Have students explore California's geography to learn why California is able to grow a diverse variety of fruits and vegetables. Topics to study may include:

- State and regional climates
- Land features and general topography
- Annual and monthly precipitation
- Types of soil

For more activities, visit:
www.harvestofthemonth.com

Just the Facts

- There are about 250,000 date palm trees in the United States, most of which are on 5,000 acres in the Coachella Valley. In comparison, Iraq — which is only slightly larger in size than California — has nearly 22 million date palm trees.
- The fig is actually an inverted flower while the seeds are the drupes, or real fruit.
- The fiber and sorbitol found in dried plums can help retain moisture in leaner cuts of red meat and poultry.
- On average, Americans consume about two pounds of raisins per year, slightly ahead of fresh grapes.

Dried Fruit History

- Athenians, including Plato, referred to themselves as "philosykos," which translates to "friend of the fig."
- After his failed gold mining venture, Frenchman Louis Pellier introduced Californians to dried plums at his Santa Clara Valley nursery in 1856.
- Raisins are noted in ancient writings more than 3,500 years ago, but it wasn't until 1876 when Scottish immigrant William Thompson developed a seedless grape variety in the San Joaquin Valley that the raisin industry was launched.
- Early USDA explorer Bernard Johnson became the "father of the California date industry" when he established a research station near the desert town of Mecca in the late 1880s.

For more information, visit:
www.californiadriedplums.org
www.californiafigs.com
www.calraisins.org
www.datesaregreat.com

Cafeteria Connections

Coordinate with your school nutrition staff to carry out this activity in the cafeteria.

- Fill four transparent containers of the same size with a different dried fruit (e.g., dates, figs, plums, raisins).
- Have students estimate the number of dried fruit pieces and number of cups in each container.
- Promote the contest in classrooms and provide a place for students to submit their entries.
- Award classroom(s) with the most correct guesses with the jars of dried fruit or make trail mix.

Literature Links

- **Elementary:** *First Day in Grapes* by L. King Perez, *Making Raisins* by Marvin Buckley and *The Reason for a Flower* by Ruth Heller.
- **Secondary:** *The Vineyard* by Idwal Jones, *Four Seasons in Five Senses: Things Worth Savoring* by David Masumoto and *The Fig Can Teach You A Lot About Nutrition* by the California Fig Advisory Board.

For more ideas, visit:
www.cfaitc.org/books

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CDPH California Department of PublicHealth

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