

# Harvest of the Month



Network for a Healthy California



## Health and Learning Success Go Hand-In-Hand

Learning goes beyond the classroom. Food is something we all have in common. Studies show that learning activities involving food engage more of the senses and thus capture the attention of more students than simpler activities using textbooks or pencil and paper. Use *Harvest of the Month* to increase student learning about health and nutrition, and promote retention through hands-on practice and by teaching others.

## Exploring California Beets: Taste Testing

### Getting Started:

- Talk to your local store's produce manager about getting samples of fresh and canned beets for taste tests.
- Cook fresh beets in advance (roast or microwave). Sauté beet greens in olive oil with lemon.

### What You Will Need (per group):

- 1 cup each of raw and cooked beets, sliced
- 1 cup of canned beets (no salt added)
- 1 cup of cooked beet greens
- Printed Nutrition Facts labels of beets (raw and cooked) and beet greens (cooked).\*

\*Download from [www.harvestofthemoth.com](http://www.harvestofthemoth.com).

### Activity:

- Make a 4x5 chart labeling the columns by each of the four varieties of beets (raw, cooked, canned, greens). Label rows by the five senses.
- Examine each variety and record observations in chart. Discuss findings as a class.
- Make a Venn diagram for raw and cooked beets. Use the Nutrition Facts labels to record the similarities and differences.
- Draw another Venn diagram and repeat for cooked beets and cooked beet greens.
- Take a poll of students' favorite variety. Share results with school nutrition staff.

For more ideas, reference:

[www.actionforhealthykids.org/school-programs/our-programs/game-on/](http://www.actionforhealthykids.org/school-programs/our-programs/game-on/)



## Nutrition Facts

Serving Size: ½ cup cooked beets, sliced (85g)

Calories 37      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 65g      3%

Dietary Fiber 2g      7%

Sugars 7g

Protein 1g

Vitamin A 1%      Calcium 1%

Vitamin C 5%      Iron 4%

## Cooking in Class: Mandarin Beet Salad

Makes 32 servings at ¼ cup each.

### Ingredients:

- 4 cups canned beets, drained
- 2 cups canned mandarin oranges in 100% juice, drained (reserve ¼ cup juice)
- 2 cups of currants or raisins
- Paper plates and forks

1. Combine beets, mandarins, currants, and ¼ cup of reserved juice in a bowl. Mix well.
2. Place ¼ cup scoops on paper plates. Serve immediately or chilled.

Source: Hawthorne School District, *Network for a Healthy California*, 2009.

For nutrition information, visit: [www.harvestofthemoth.com](http://www.harvestofthemoth.com)

## Reasons to Eat Beets

- A ½ cup of beets is a good source of folate and manganese. It is also a source of riboflavin.\*
- A ½ cup of cooked beet greens is an excellent source of vitamin K, vitamin A, and vitamin C. It is also a good source of manganese, potassium, and riboflavin.\*

\*Learn about riboflavin on page 2.

### Champion Sources of Riboflavin\*:

- Almonds
- Cooked beet greens
- Eggs
- Fortified cereals
- Lowfat milk
- Mushrooms
- Spinach

\*Provide a good or excellent source of riboflavin. Learn about riboflavin on page 2.

Source: <http://lpi.oregonstate.edu/infocenter/vitamins/riboflavin/>

**BEETS**

## What is Riboflavin?

- Riboflavin is also known as vitamin B<sub>2</sub>.
- It is important for building healthy red blood cells.
- Riboflavin is a water-soluble vitamin, which means it is not stored in the body.
- Riboflavin works with other B-vitamins to help your body grow and release energy from the carbohydrates you eat.
- Riboflavin is found in whole grain cereals, mushrooms, zucchini, and lowfat yogurt. (See page 1 for other good and excellent sources.)

For more information, visit:

[www.eatright.org/Public/content.aspx?id=3071&terms=riboflavin](http://www.eatright.org/Public/content.aspx?id=3071&terms=riboflavin)

## How Much Do I Need?

A ½ cup of beets is about the size of one small beet. This is about the size of one cupped handful. Beets are sold fresh, canned, and pickled. The amount of fruits and vegetables you need depends on your age, gender, and physical activity level. All forms count toward your recommended daily amounts! Have students find out how many cups they should aim to eat each day and write down ways for how they plan to reach their goals.

### Recommended Daily Amounts of Fruits and Vegetables\*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
<b>Males</b>	2½ - 5 cups per day	4½ - 6½ cups per day
<b>Females</b>	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.

## How Do Beets Grow?

Beets are a cool-season, herbaceous plant grown either as an annual or biennial crop. Most varieties are frost-hardy, but cannot endure extreme heat. In California, the first plantings occur in March and continue until late June.

Beets prefer deep, well-drained soils and have a large root system that extends down to three feet or more. Depending on use, they are generally picked in 40 to 60 days (small, table beets), 60 to 70 days (round, cooking beets), or 70 to 80 days (processing beets) after planting.

Growing beets adds minerals to the soil, as the leaves are made up of 25% magnesium, which is great for compost piles. Beets do well when planted with onions, cooking greens (kohlrabi), radishes, turnips, and garlic. Plant beets where legumes previously grew (except runner or pole beans) because the soil is rich in nitrogen that beets need to grow.

Visit [www.harvestofthefmonth.com](http://www.harvestofthefmonth.com) to download a reproducible botanical image and a growing chart for beets.

For more information, visit:

<http://aggie-horticulture.tamu.edu>

[www.anrcatalog.ucdavis.edu/pdf/8096.pdf](http://www.anrcatalog.ucdavis.edu/pdf/8096.pdf)

## Botanical Facts

**Pronunciation:** 'bēt

**Spanish name:** betabel

**Family:** Chenopodiaceae

**Genus:** *Beta*

**Species:** *Beta vulgaris*

Beets are a root vegetable of the Chenopodiaceae, or Goosefoot family. The *Beta vulgaris* species includes beets (table beets, processing beets, and novelty beets), chard, mangel-wurzels, and sugar beets. Beets contain a pigment called *betacyanin* that gives them their deep, red color. The beet, like its cousin the turnip, is known for its edible leaves and roots.

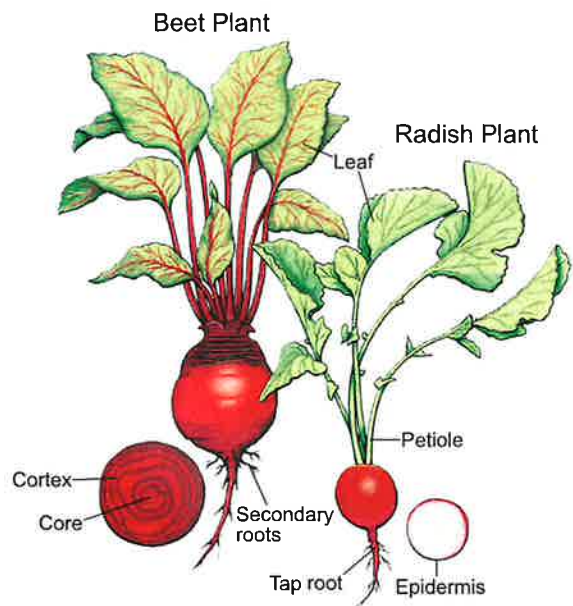
Chard varieties include Swiss chard, leaf beet, spinach beet, silver beet, seakale beet, and white beet. Chard produces broad leaves rather than a large round root, and only the leaves are edible. Sugar beets contain a natural sugar called *sucrose* and contain twice the amount of sugar as table beets. They provide about one-third of the world's table sugar supply. Mangel-wurzels are used for livestock feed.



Beet types	Shape and color	Varieties
Table beets	Round; primarily red	Detroit Stains, Ruby Queen, Red Ace F1, Crosby's Greentop, Winter Keeper
Processing beets	Cylindrical; mostly red and purple	Detroit Short Top, Ruby Ball, Scarlet Supreme
Novelty beets	Elongated, round, and/or cylindrical; Striped, red, yellow, or white	Cylindra, Forono, Chiaggia, Burpee Golden, Showwhite, Albino

For more information, visit:

[www.anrcatalog.ucdavis.edu/pdf/8096.pdf](http://www.anrcatalog.ucdavis.edu/pdf/8096.pdf)



## School Garden: Winter Gardening

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.

Here are a few tips to help maintain your garden during the winter months.

- Clean excess debris from vegetable beds to promote plant health and reduce pests.
- Practice composting to replenish soil nutrients for the next growing season. Visit <http://web.extension.uiuc.edu/homecompost/methods.html#5> to learn how.
- Plant cover crops to help add organic material to the soil. Legumes will also fix nitrogen\* in the soil. (Hint: Plant these early to last throughout winter.)

\*Refer to *Dried Beans* newsletter for more information about nitrogen fixing.

For more ideas, visit:  
[www.csgn.org](http://www.csgn.org)

## Home Grown Facts

- Beets are grown commercially in 31 states and California is the nation's largest supplier.
- San Benito and San Bernardino are the highest producing counties of table beets, providing more than half of the state's supply.
- Sugar beets are primarily grown in these five counties: Imperial, Fresno, Kern, Merced, and Kings. Imperial County produces almost half of the state's supply.



For more information, visit:  
[www.nass.usda.gov](http://www.nass.usda.gov)  
[www.cdffa.ca.gov](http://www.cdffa.ca.gov)

## Student Champions

Students can complete these activities to become an advocate for preventing foodborne illnesses.

- Research food handling and safety techniques.
- Write editorials to local newspapers on preventing foodborne illnesses.
- Create flyers or posters to encourage hand washing and proper food handling. Post in the school cafeteria and restrooms.
- Complete activities in *Food Safety: From Farm to Fork* (California Foundation for Agriculture in the Classroom, 2009).\*

\*Download from [www.cfaitc.org/FoodSafety/pdf/FoodSafety.pdf](http://www.cfaitc.org/FoodSafety/pdf/FoodSafety.pdf).

Adapted from: [www.cfaitc.org](http://www.cfaitc.org)

For more ideas, reference:  
[www.fightbac.org](http://www.fightbac.org)

## Student Sleuths

- 1 What is riboflavin? How does it work in our bodies? What happens when you get too much riboflavin? Too little? Make a list of good and excellent sources of riboflavin. From that list, make a plan for how you will get your daily recommended amount of riboflavin.
- 2 A ½ cup of cooked or raw beets is a good source of folate. Describe what folate does for our bodies. Why do we need to get folate from the foods we eat? Make a list of foods that provide an excellent source of folate. Set goals for how you can include folate in your meals.
- 3 Which parts of the beet plant are edible (root, stem, seed, fruit, leaf)? Draw a picture of a beet plant and label the edible parts. Make a list of other fruits and vegetables that have more than one edible part.

For information, visit:  
[www.cfaitc.org/wegarden/pdf/EatYourPlants.pdf](http://www.cfaitc.org/wegarden/pdf/EatYourPlants.pdf)

## A Slice of Beet History

- The wild beet is believed to have descended from the sea-beet (*Beta maritima*) and originated in the Mediterranean. It has been cultivated since about the third century.
- The leaves were used for medicinal purposes, and then later as a potherb.
- Romans were some of the first to cultivate and develop beets for their roots and used them for feeding animals. Greeks were the first to consume both roots and leaves.
- The sugar beet (or “white beet”) was developed in the 18<sup>th</sup> century and, in the early 1800s, the French began extracting the sugar.
- Colonists brought red and sugar beets to America in the 19<sup>th</sup> century.

For more information, visit:  
*Growing Vegetables California Style* by Marsha Prillwitz, 1988.  
<http://food.oregonstate.edu/glossary/b/betavul.html>

## Literature Links

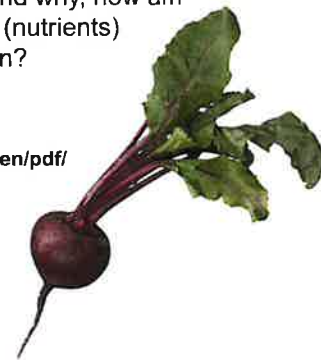
Work with your librarian to host a fictional writing contest around the theme: *My Life as a Fruit or Vegetable*.

### Student Activity:

- Write a creative story about life as a fruit or vegetable and the adventure from farm to table. Select a fruit or vegetable to be the main character of the story.
- Think about aspects of growth and production from the perspective of the fruit or vegetable, such as: how am I planted, where am I grown and why, how am I harvested, what good things (nutrients) can I offer, and how am I eaten?
- Read stories aloud in class.
- Display stories in library.

Adapted from: [www.cfaitc.org/wegarden/pdf/MyLifeAsAFruitOrVegetable.pdf](http://www.cfaitc.org/wegarden/pdf/MyLifeAsAFruitOrVegetable.pdf)

For a list of book ideas, visit:  
[www.cfaitc.org/books](http://www.cfaitc.org/books)



## Adventurous Activities

### Nutrition Investigation:

#### Healthy Snacks, Healthy Choices

##### Materials:

- Display board
- Variety of student snacks (chips, crackers, whole fruit, fruit strips, cheese, etc.)
- Handout 6.8 (page 127) from *Activities for Youth on Nutrition and Physical Activity*\*

##### Activity:

- Make a list of the top ten snacks students eat on a regular basis. Write on board.
- Make a checklist with these headings: *Low in fat?*, *Low in sugar?*, *High in fiber?*, *Whole grain?*, and *High in Vitamins and Minerals?*
- Using Handout 6.8, assess the ingredients in each snack.
- Place a star next to snacks that are healthy.
- Have students write down five healthy snacks that they will try to eat on a regular basis. Encourage students to share lists with their families.

\*Download from [www.fns.usda.gov/tn/Resources/EmpYouth\\_ch6.pdf](http://www.fns.usda.gov/tn/Resources/EmpYouth_ch6.pdf).

Source: *Empowering Youth with Nutrition and Physical Activity, Activities for Youth on Nutrition and Physical Activity*, Team Nutrition, USDA, CDC, 2007, p. 127.

For more ideas, visit:

[www.nyaged.org/aitc/educators/lesson.htm](http://www.nyaged.org/aitc/educators/lesson.htm)

## Cafeteria Connections

Restaurants in California are required to provide nutrition information for all menu items. Work with school nutrition staff to help students learn how to read nutrition labels and determine what is a healthy meal or snack.

- Invite school nutrition staff to explain the parts of a Nutrition Facts label.\*
- Ask school nutrition staff to display Nutrition Facts labels for all produce items in the salad bar area.\*\*
- Ask students how they would like to support the cafeteria to provide healthier menu options. Encourage students to submit ideas to school nutrition staff.

**Follow-up:** Complete *Adventurous Activities*.

\*Use the "What's on a Label" activity (page 69) from the *School Idea & Resource Kit*. Download from [www.cdph.ca.gov/programs/cpns/Documents/Network-FV-PP-4thGradeFullKit.pdf](http://www.cdph.ca.gov/programs/cpns/Documents/Network-FV-PP-4thGradeFullKit.pdf).

\*\*Download labels from [www.harvestofthemonth.com](http://www.harvestofthemonth.com).

For more ideas, visit:

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

## Just the Facts

- The color of beet roots can range from dark purple to bright red, yellow, and white. When cut transversely, the roots show light and dark rings, sometimes alternating.
- The Chioggia beet is red and white-striped, and nicknamed the "candy cane" beet.
- Beet juice is widely used as a "natural" dye to give pink or red coloration to processed foods.
- Beets have the highest sugar content of any vegetable.
- Small beets (about a half-inch in diameter) are good for eating raw. Medium and large-sized beets are best for cooking. Very large beets (more than three inches in diameter) may be too woody for eating.



For more information, reference:

<http://aggie-horticulture.tamu.edu/plantanswers/publications/vegetabletravelers/beets.html>

## Physical Activity Corner

There are 1,440 minutes in one day. The *Physical Activity Guidelines for Americans (Guidelines)* recommend that students get at least 60 minutes of moderate to vigorous physical activity every day. The *Guidelines* recommend engaging in the following types of activity to meet daily needs:

- 1 Aerobic activity
- 2 Muscle strengthening
- 3 Bone strengthening

##### Activity:

- Review *Guidelines*\* with your class.
- Have students write down how they plan to get 60 minutes of activity each day of the week.
- Have students create a worksheet to track daily activity.
- Monitor students' progress to help them meet their goals.

##### Helpful Hint:

Connect this activity to students' preparations for FITNESSGRAM® testing in grades 5, 7, and 9.

\*Download from [www.health.gov/paguidelines](http://www.health.gov/paguidelines).

For more information, visit:

[www.cdc.gov/physicalactivity/everyone/guidelines/children.html](http://www.cdc.gov/physicalactivity/everyone/guidelines/children.html)



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