

Harvest of the Month



Network for a Healthy California



SAVOY CABBAGE

Nutrition Facts

Serving Size: 1 cup raw savoy cabbage, shredded (70g)

Calories 19 Calories from Fat 1

	% Daily Value
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 20mg	1%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	9%
Sugars 2g	
Protein 1g	
Vitamin A 14% Vitamin C 36% Calcium 2% Iron 2%	

Source: www.nutritiondata.com

For nutrition information in bar graph format, visit the *Educators' Corner* at www.harvestofthemonth.com.

CABBAGES

February

Health and Learning Success Go Hand-in-Hand

Do more. Watch less. API scores improve when students limit screen time. Spring testing is around the corner. Encourage students to turn off the TV and other electronic screens and get at least one hour of physical activity each day to help keep them healthy, strong and focused. **Harvest of the Month** connects with core curricula to introduce students to fruits and vegetables and ways to be more active.



RED (PURPLE) CABBAGE

Exploring California Cabbages

By offering activities that allow students to experience cabbages using their senses, it engages them in the learning process and creates increased interest, awareness and support for eating more fruits and vegetables.

Tools:

- Green, red (or purple), savoy and Chinese cabbage varieties; harvest from school garden
- Two heads of each variety
- Small sample cups (four cups per group of four students)
- White board and markers
- Cutting board and knife

Optional: Paper and pencils or other art supplies

Sensory Exploration Activity:

- Wash and drain one head of each variety
- Chop and fill sample cups, keeping varieties separate; label cups and set aside
- Display four unwashed cabbage heads in front of room
- Divide students into groups of four
- Compare different types of cabbages' nutrient values; identify when, where and how cabbage is grown in California*
- Distribute sample cups to groups, one variety at a time
- Observe tastes, colors and textures; record observations on board
- Discuss similarities and differences between varieties; vote on class favorite

Optional: Ask students to select and draw one variety

*Refer to *Home Grown Facts* on page 3.

For more ideas, reference:

Kids Cook Farm-Fresh Food, CDE, 2002.

Cooking in Class: Fruity Cabbage Salad

Ingredients:

Makes 35 tastes at ¼ cup each

- 6 cups green cabbage, shredded (about 1-lb.)
- 2 large red apples, chopped
- ¾ cup raisins
- ⅓ cup light mayonnaise
- ¾ cup canned pineapple juice
- Small paper plates and forks

Mix cabbage, apples and raisins in large bowl. In separate bowl, whisk mayonnaise and pineapple juice. Add to salad and toss gently. Serve immediately.

Source: CDE, 2006.

Cabbage is a cruciferous vegetable of the mustard family. Cruciferous vegetables are plants that contain indoles and isothiocyanates, phytochemicals with anti-cancer properties.

Reasons to Eat Cabbages

One serving of raw shredded cabbage provides:

- An excellent source of Vitamin C and Vitamin K.
- A good source of Vitamin A (includes red, purple and savoy varieties).
- A good source of folate (includes savoy and Chinese varieties).



CHINESE CABBAGE

February Events

- American Heart Month
- National Future Farmers of America Week
- National Children's Dental Health Month

How Much Do I Need?

A serving of cabbage is one cup raw shredded leaves (about two cupped handfuls). When cooked, this is about one-half cup. Remind students that eating a variety of colorful fruits and vegetables throughout the day will help them reach their recommended needs.

Recommended Daily Amounts of Fruits and Vegetables*

Kids, Ages 5-12	Teens, Ages 13-18	Adults, 19+
2½ - 5 cups per day	3½ - 6½ cups per day	3½ - 6½ cups per day

*Ranges take into account three activity levels: sedentary, moderately active and active. For example, active individuals should aim to eat the higher number of cups per day. Visit www.mypyramid.gov to learn more.

Eat Your Colors

Fruits and vegetables come in a rainbow of colors. Eat a variety of colorful fruits and vegetables every day — red, yellow/orange, white, green and blue/purple. These may lower the risk of some cancers. Cabbages come in a variety of colors including green, white, yellow, red and purple. However, their nutrient content classifies them in the green and blue/purple color groups.*

Color Group	Health Benefits	Examples of Fruits and Vegetables
Green	Help maintain vision health and strong bones and teeth	Green, Chinese and savoy cabbages; kohlrabi; kale; broccoli; Brussels sprouts; cherimoya; avocados
Blue/Purple	Help maintain healthy aging, memory function and urinary tract health	Purple and red cabbages*; eggplants; dried plums; figs; raisins

*Do *Student Sleuths* on page 3 to learn more about color groupings.

For more information, visit:
www.fruitsandveggiesmatter.gov

Student Advocates

National Future Farmers of America Week takes place in February. Encourage students to participate in community activities and show their appreciation for California's farmers.

For example:

- Interview local farmer(s). Ask details about daily schedule, work duties and why he/she likes it. Submit article for school newsletter.
- Send letter of appreciation to a farmer (anonymous or personal).
- Contact a local farm and ask to be a guest visitor for the day.
- Write a children's book (with illustrations) about the life of a farmer. Imagine what life would be like without farms.

For more information, visit:
<http://www.ffa.org>

What's in a Name?

Pronunciation: kăb'ij
Spanish name: cole
Family: Brassicaceae
Genus: *Brassica*
Species: *Brassica oleracea*
Group: Capitata



Cabbage is a cole crop of the Mustard family (Brassicaceae) and its varietal name, *B. oleracea* Capitata, distinguishes this cruciferous vegetable as being "in the form of a head." (The Brassicaceae family was formerly called Cruciferae.) The word *cabbage* derives from the French word *caboché*, meaning "head."

The species *B. oleracea*, or wild cabbage, is grouped into seven major cultivars based on development. (See chart below for cultivars.) Within the Capitata Group, there are more than 400 cabbage varieties but most common are the green, red, purple and savoy varieties. Most Asian cabbage varieties belong to another species, *B. rapa*. This includes Chinese cabbage, which is also known as Napa or celery cabbage.

<i>B. oleracea</i> Cultivar Group	Includes
Acephala	Kale, collard greens
Alboglabra	Kai-lan (Chinese broccoli)
Botrytis	Cauliflower
Capitata	Cabbage
Gemmifera	Brussels sprouts
Gongylodes	Kohlrabi
Italica	Broccoli

For more information, visit:
<http://plants.usda.gov>

Just the Facts

- Many vegetables evolved from the original wild cabbage including broccoli, Brussels sprouts, cauliflower, collards, kale and kohlrabi.
- All cole crops can be cross-bred, making it easy and economical to develop new cabbage varieties.*
- Primary uses of cabbages include processed coleslaw (40–45%), fresh head (35%), sauerkraut (12%), various fresh-cut products (5–10%) and dried (less than 5%).
- Technological advancements in packaging have increased the number of cabbage heads for market about 30 percent since 1996.

*For more information about cole crops, refer to Cycle I (Broccoli) or download from www.harvestofthemonth.com.

Sources:

www.fruitsandveggiesmatter.gov/month/cabbage.html
www.ers.usda.gov/Briefing/Vegetables/vegpdf/FrCabbageHigh.pdf

A Shred of Cabbage History

- As early as 600 B.C.E., wild cabbage indigenous to Asia and the Mediterranean slowly spread into Northern Europe by the Celts and later the Romans.
- Able to store for long periods, cabbage was a staple item of Europeans in the Middle Ages. Its juice was commonly used to heal wounds and as a cough remedy.
- In 1541, French explorer Jacques Cartier introduced cabbage to North America.
- Since cabbage contains lots of Vitamin C, other explorers, including Captain Cook, traveled with it in order to prevent scurvy. Cabbage rapidly spread across continent.
- Opening of trade with Asia in the late 19th century brought Chinese cabbage to California.

For more information, reference:

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

www.localharvest.org/cabbage.jsp

How Do Cabbages Grow?

Cabbage is the most easily grown vegetable of the Mustard family. It is a cool-season crop that matures prior to extreme heat. Cool-season crops are grown for vegetative parts, including the roots (carrots), leaves (cabbages), stems (celery) and immature flowers (broccoli). Due to smaller plant size and shallow roots, cabbages are often started from seeds indoors.

Growing Cabbage Heads

Temperature	Grows best at 50 to 75 F
Soil	Sandy loam or raised clay soil beds; requires added compost and moisture
Exposure	Full sun or partial shade
Planting	Seedlings spaced 1 to 2 feet apart; rows spaced 2 to 3 feet apart
Days to maturity	50 to 90 days
Harvest period	Average two crops per year (winter and spring)
Harvesting	Hand-harvested and field packed

For more information, reference:

Green Power: Leaf and Flower Vegetables,
Meredith Sayles Hughes, 2001.

www.urbanext.uiuc.edu/veggies/cabbage1.html

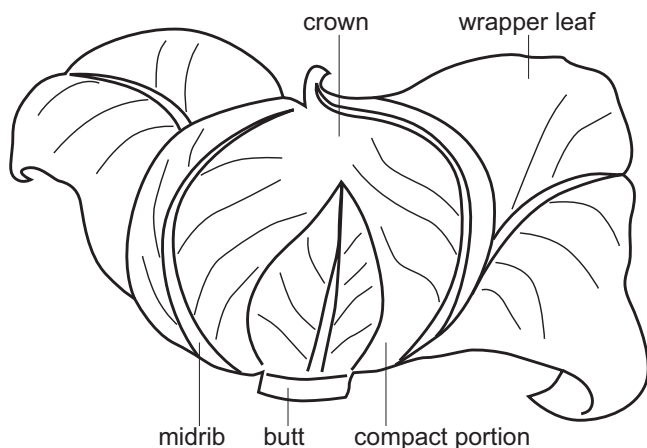


Image adapted from:

www.inspection.gc.ca/english/plaveg/fresh/vegleg/cabbchou/cabbage.gif

To download reproducible botanical images, visit the *Educators' Corner* at www.harvestofthemonth.com.

Student Sleuths

- 1 Make a list of cruciferous vegetables that you eat and those you would try. What phytochemicals do they contain and what health benefits do these provide to your body? Develop a list of snack suggestions that include cruciferous vegetables and share with your classmates.
- 2 Fruits and vegetables are categorized into color groups based on their nutrients and phytochemicals. Research why red cabbage is part of the blue/purple color group (not the red group) and white-colored cabbage is part of the green color group. (Hint: Find what nutrients and phytochemicals are common to each color group.) What other fruits or vegetables fit into these color groups? Look for recipes you can prepare at home that include these fruits and vegetables.
- 3 Blue/purple fruits and vegetables — like purple and red cabbages — contain anthocyanins. What are anthocyanins and what do they do for the mind and body? Develop a plan to include more blue/purple fruits and vegetables in your meals, if needed.

For information, visit:

www.ers.usda.gov

www.leafy-greens.org/cabbage_family.html

Home Grown Facts

- With over 13,000 acres harvested for cabbages, California leads the nation in commercial cabbage production at a value of over \$70 million.
- The main growing regions are in the central coast (Monterey, San Benito and Santa Clara counties); southern coast (Santa Barbara, Ventura, San Luis Obispo, Los Angeles, Orange and San Diego counties); and southern desert (Imperial and Riverside counties).
- Monterey, Ventura, Santa Barbara, Imperial and San Luis Obispo are the leading cabbage-producing counties.
- Cabbage is shipped year-round in California reaching its peak in March for traditional St. Patrick's Day fare of corned beef and cabbage.

2005 Data

For more information, visit:

www.nass.usda.gov/About_NASS/index.asp

www.cdfa.ca.gov/card/card_06.htm

Cafeteria Connections

Promote students' health by incorporating more cabbage into school meals. Gradually replace items that typically use shredded lettuce or lettuce pieces with shredded cabbage. Start with a quarter of the cabbage mixture and work up to one-half.

Source: Team Nutrition, "Food Works," 1995.



Physical Activity Corner

Pairing students with “workout buddies” can promote cooperation and increased participation. Celebrate the Lunar New Year in February by showing students how to do Chinese jump rope, an activity to improve kinesthetic movement and endurance. Set aside time each week for students to practice in a group.

Materials:

- Chinese jump rope (extra long, thick elastic band)

Activity:

- Two students place elastic band around ankles and stand a few feet apart.
- Third student completes a series of jumps/tricks between rope without touching the rope.
- Each time student completes jump series, the rope moves up (calves, knees, waist, etc.); students should not stop between jump series (to promote endurance).
- If student misses jump or touches rope, move to next student.

For more information, visit:
www.kidnetic.com



Adventurous Activities

Science Investigation:

Use cabbage juice to determine whether a substance is an acid or base.

Materials: can opener, 1 can red cabbage (not sauerkraut), colander, small bowl, measuring spoons, 3 glass jars, 1 tablespoon vinegar, 1 tablespoon baking soda, 1 tablespoon distilled water

Procedure:

- Open can of cabbage.
- Use colander to drain cabbage juice into bowl.
- Put two tablespoons (30ml) of juice into each glass jar.
- Add vinegar to first jar. Record color of juice.
- Add baking soda to second jar. Record juice color.
- Add distilled water to third jar. Record juice color.
- Discuss results.

For sample discussion, visit the *Educators' Corner* at www.harvestofthemoth.com.

Source: *The Science Chef Travels Around the World*, Joan D'Amico and Karen Drummond, 1996.

For more ideas, visit:
www.harvestofthemoth.com

School Garden: Grow a Head

Note: Plan to harvest cabbage before temperatures reach 90 degrees.

Tools:

- Cabbage seeds (multiple varieties, if possible)
- Indoor pot(s)
- Outdoor container (with potting soil) or garden bed
- Compost or all-purpose vegetable fertilizer

Activity:

- Start seeds indoors following seed packet instructions. (Begin up to two months before last expected frost date.)
- Transplant cabbage in full sun to large outdoor container or garden bed.
- Space large cabbages 20 inches apart (12 inches apart for small heads).
- Keep soil moist. (Hint: Use mulch around plants.)
- Fertilize every three weeks with compost.
- Harvest firm cabbage heads by cutting the head from stem and removing outer leaves.

Go Farther: While cabbage is growing, have students bring in family recipes with cabbage as an ingredient.*

*For complete activity, visit the *Educators' Corner* at www.harvestofthemoth.com.

Adapted from: www.lifelab.org

For more ideas, visit:

A Child's Garden of Standards, CDE, 2004.

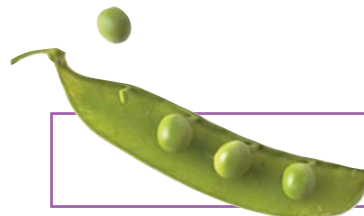
Literature Links

- **Elementary:** *Tiny Green Thumbs* by C.Z. Guest and *What is a Plant?* by Bobby Kalman.
- **Secondary:** *Green Power: Leaf and Flower Vegetables* by Meredith Sayles Hughes and *100 Vegetables and Where They Came From* by William Woys Weaver.



For more ideas, visit:

www.cfaitc.org/Bookshelf/Bookshelf.php



Next Month: Peas

