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
- ½ 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.


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).

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

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Cups per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kids, Ages 5-12</td>
<td>2½ - 5 cups</td>
</tr>
<tr>
<td>Teens, Ages 13-18</td>
<td>3½ - 6½ cups</td>
</tr>
<tr>
<td>Adults, 19+</td>
<td>3½ - 6½ cups</td>
</tr>
</tbody>
</table>

*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.*

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

*B. oleracea Cultivar Group Includes

<table>
<thead>
<tr>
<th>Cultivar Group</th>
<th>Includes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acephala</td>
<td>Kale, collard greens</td>
</tr>
<tr>
<td>Alboglabra</td>
<td>Kai-lan (Chinese broccoli)</td>
</tr>
<tr>
<td>Botrytis</td>
<td>Cauliflower</td>
</tr>
<tr>
<td>Capitata</td>
<td>Cabbage</td>
</tr>
<tr>
<td>Gemmifera</td>
<td>Brussels sprouts</td>
</tr>
<tr>
<td>Gongylodes</td>
<td>Kohlrabi</td>
</tr>
<tr>
<td>Italica</td>
<td>Broccoli</td>
</tr>
</tbody>
</table>

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

What’s in a Name?
Pronunciation: káb’îj
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 caboche, 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.

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
- http://plants.usda.gov
- www.fruitsandveggiesmatter.gov
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

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

For more information, reference:
www.urbanext.uiuc.edu/veggies/cabbage1.html

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.

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.harvestofthemonth.com.


For more ideas, visit: www.harvestofthemonth.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.harvestofthemonth.com.

Adapted from: www.lifelab.org

For more ideas, visit:

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