FRESH from the FARM

The Fresh from the Farm featured fruit is

Cranberry

for educators

SMART CHOICES

Healthy Kids Do Better in School

Family wellness impacts children at school and home. Research shows that children of families who eat together several times a week do better in school. Encourage students and parents to cook and eat healthy meals and snacks, and be physically active together. **Fresh from the Farm** focuses on helping students and their families develop healthy habits.

Cooking in Class:

Trail Mix

Ingredients:

- 2 cups dried cranberries
- 1 cup each of two unsweetened breakfast cereals (suggestions: Cheerios, Chex, or Kix cereals)
- 1 cup pretzels
- ¾ cup sunflower seeds

Mix together in a large bowl. Serve each student ¼ cup in paper cup. (Check for seed allergies before adding sunflower seeds.)

Exploring Canberries: Taste Testing

What you will need:

- Dried cranberries
- Cranberry sauce
- Cranberry juice
- Fresh cranberries
- Napkins and paper plates
- Copies of Nutrition Facts labels for dried cranberries, cranberry juice, cranberry sauce, and fresh cranberries.

Activity:

- Give each student ¼ cup of each type of cranberry.
- Explore differences in colors, textures, shapes, smells, and tastes for each product.
- Record observations in a sensory chart.
- Compare calories, vitamin C, and fiber content using the Nutrition Facts labels. *(Download Nutrition Facts from www.nutritiondata.com)*
- Record observations.
- Report observations to class and discuss similarities and differences.
- Survey class to determine which is the favorite. Have students create a graph to show the results, and share with school nutrition staff.

Recommended Daily Amounts of Fruits and Vegetables*

Ages 5 - 12	Ages 13 & older
2 ½ - 5 cups per day	3 ½ - 6 ½ cups per day

**Active people should eat the higher number of cups per day.*

Visit www.mypyramid.gov to learn more.

Nutrition Facts

Serving size 1/2 Cup Fresh (55g)

Amount per serving	
Calories 30	Calories from Fat 0g
	% Daily Value
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 6g	**2%**
Dietary Fiber 2g	**15%**
Sugars 2g	
Protein 0g	

Manganese 4% Vitamin K 3%
Vitamin C 11%

Source: www.nutritiondata.com

Just the Facts

- The cranberry was first used by Native Americans, who used the wild berry for food, fabric dye and as a healing agent.
- The Pilgrims named the fruit “craneberry” because of its small, pink blossoms that appear in the spring and resemble the head and bill of a Sandhill crane. Craneberry gradually became cranberry.
- Cranberry cultivation by European immigrants began in 1816 when Captain Henry Hall of Dennis, MA transplanted cranberry vines, fenced them in, and amended the soil for better production.
- American whalers and mariners carried cranberries on board their ships to help prevent scurvy from developing in crew members.

Sources: Cape Cod Cranberry Growers’ Association at www.cranberries.org; Wisconsin Cranberry Growers Association at www.wiscran.org

Dakota County

Public Health
Prevent. Promote. Protect.
TO HEALTHY KIDS

How Do Cranberries Grow?

Cranberries can grow only under specific conditions. They require acid peat soil, adequate fresh water, sand, and an April-September growing season. They must have winter months that provide an extended cooling period so that the plants can grow dormant and develop mature fruiting buds. Cranberries grow in bog beds that are layered with sand, peat, gravel and clay. These bogs were originally made by glacier deposits.

Native Americans and European settlers harvested cranberries by hand for centuries. Today cranberries are harvested using mechanical pickers and water reels.

Wet harvesting involves flooding a dry bog and using water reels to drive through the water and loosen the berries from the vines (see above photo). Floating berries are loaded into trucks. Dry harvesting uses a machine with metal teeth to comb the berries off the vine and collect them in burlap sacks.

What are Phytochemicals?

Anthocyanins, compounds that give cranberries their red color, are powerful phytochemicals. Laboratory studies have shown that cranberry extract reduces oxidation of LDL-cholesterol (so-called "bad" cholesterol), an effect which research indicates may be important in maintaining a healthy heart.

- Phytochemicals (also known as phytonutrients) are naturally-occurring compounds found in plants. Plants develop these chemicals to protect themselves, but now research has found that these chemicals also have protective factors for humans.
- Foods that contain phytochemicals are also described as "functional" because they provide more than just nutrients.
- Phytochemicals function as antioxidants, promote immunity, increase communication with cells in the body, and help repair damage to DNA.
- Phytochemicals are grouped by their possible protective function and biochemical characteristics. They are classified as: carotenoids, phenolics, alkaloids, nitrogen-containing compounds, and organosulfur compounds.
- More than 2,000 phytochemicals are plant pigments and contribute to the variety of colorful fruits and vegetables. These include lycopene (red), anthocyanins (red, blue/purple), phenolics (blue/purple), lutein (green), indoles (green or white and from the crucifer family), beta carotene (orange), bioflavonoids (orange/yellow), and allacin/allium (mostly white members of the onion family).

For more information, visit:www.pbhfoundation.org
http://chnr.ucdavis.edu/content/Fact%20sheets/2009/phytochemical

What's in a Name?

Pronunciation: Kran-ber-ee
Family: Ericaceae
Genus: *Vaccinium*
Species: *macrocarpon*

The cranberry is a low-growing, woody vine with small, oval leaves. The plant's stem runs along the ground with runners that are two to six feet long. Short branches shoot off from buds on the vines. These branches produce fruit buds. Each fruit bud may contain as many as seven flowers, which can become berries. The cranberry is a perennial and an undamaged cranberry vine can survive indefinitely.

Of all popular fruits, only three, the blueberry, the Concord grape, and the cranberry, are native to North America. Cranberries are sold fresh, but most are sweetened and dried or made into juice or sauce. Fresh cranberries have an acidic taste, so sweetener is added for most recipes and cranberry products. The sugar or other sweetener adds calories.

The table below compares calorie content in typical servings for the most common cranberry products.

1 cup fresh or frozen cranberries	60 calories
8 oz. 100% cranberry juice	140 calories
1 oz. dried cranberries	130 calories
½ cup cranberry sauce	209 calories

Student Sleuths

- Search for recipes with cranberries and list the various ways that cranberries are prepared and eaten.
- Cranberries require very specific growing conditions. Find the top cranberry-producing counties in Minnesota and Wisconsin. Discuss why these counties lead cranberry production.
- Research and report on how Native Americans used cranberries.
- Discuss the medicinal properties of cranberries in history and today.
- Learn about bogs. What conditions create a bog? What unique plant and animal species live in bogs? Where are the closest bogs to your school?

Sources: www.wiscran.org, www.cranberries.org, www.nass.usda.gov/statistics-by-State

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Physical Activity Corner

Children need at least 60 minutes of physical activity daily total – it can come in smaller chunks throughout the day. Do this two-minute exercise break with students to keep their minds sharp and increase cardio/respiratory endurance.

Equipment:

- 4 cones
- Stopwatch (or wristwatch with a second hand)

Activity:

- Set up four stations in a square shape, placing cones in the corners.
- Make signs to post at each station:
  - **1** Run in place
  - **2** Squat up and down
  - **3** Regular/modified pushups (modified = on knees)
  - **4** Jump up and down
- Divide students into four groups:
  - Send each group to a different cone.
  - Give them 30 seconds to complete each activity as fast as they can.
  - After 30 seconds, move clockwise to next cone by skipping, tiptoeing, taking giant steps, or running.

Literature Links

Elementary:

- **Cranberry Thanksgiving** by Harry Devlin, (Aladdin Books, 1990)
- **Cranberries: Fruit of the Bogs** by Diane L. Burns (First Avenue Editions, 1994)
- **Cranberries** (Harvest Time Welcome Books) by Inez Snyder (Children's Press, 2004)
- **Clarence: The Cranberry Who Wouldn't Bounce** by Jim Coogan (Harvest Home Books, 2002)

Secondary:

- **Wetlands: All About Bogs, Bayous, Swamps and a Salt Marsh or Two** (Silver Burdett Press, 1998)
- **Book of Swamp and Bog: Trees, Shrubs, and Wildflowers of the Eastern Freshwater Wetlands** by John Eastman (Stackpole Books, 1995)

Recipe Corner: Apple Cranberry Salad

- 3 apples, red and green, cored and chopped into 1-inch pieces
- 1 cup celery, sliced on bias
- 3/4 cup sweetened-dried cranberries
- 1/2 cup hazelnuts, toasted and coarsely chopped
- 1/2 cup yogurt, plain, low fat
- 3 Tbsp orange juice concentrate, thawed
- 1/4 tsp salt

Blend apples, celery, cranberries and hazelnuts in large bowl; set aside. Mix yogurt, orange juice concentrate and salt until blended. Pour over apple mixture and mix until blended. Makes 6-8 servings.

Source: www.grouprecipes.com/79157/apple-cranberry-salad.html

Cafeteria Connections

Team up with your school nutrition staff to develop a lunch recipe that features Fresh From the Farm produce items. Ask students to design ads that market the new recipe to students and teachers.

Activity:

- Research the health benefits of eating cranberries.
- Conduct market research and determine:
  1. Who is your audience?
  2. What do you need to know about your audience to help pitch your product to them?
  3. How can you get this information?
- Develop a poster or magazine ad(s) that includes nutrition information.
- Display the ads in the cafeteria.

Adapted from: www.kidsgardening.com

Adventurous Activities

The Cranberry Bounce Test

Problem: Will cranberries bounce if dropped from a fixed position?

Hypothesis: Fresh, undamaged cranberries will bounce; the others will not.

Materials: 20 whole cranberries for each team, ruler, flat surface such as a desk or table top, 6" cardboard square, pencils, 2 small open containers and labels.

Experiment:

1. Have students pair off to work in teams of two.
2. Each team should randomly select 20 cranberries, and predict how many will bounce.
3. Create a table with columns for each experiment date. On each date, have space to write in "bounce," "didn't bounce," and "appearance."
4. While one partner holds a piece of cardboard at a level of 1 foot above a desk, the other will push one berry at a time off the edge of the cardboard.
5. Separate the berries into two containers labeled "Bounced" and "Didn't Bounce."
6. Count and record the berries that are found in each container. Examine the berries and describe their appearance on a data sheet.
7. Repeat the trial several times at two-day intervals and record the results.
8. Answer the following questions and make conclusions.
   - How might this information be useful to a cranberry grower?
   - Describe your results. Did more berries bounce in the earlier trials or later trials? Why do you think this happened?
   - What fraction of the berries bounced for each trial? What fraction didn't bounce?
   - Can you think of a way to keep berries fresher for a longer period of time?

Source: University of Maine Cooperative Extension, www.extension.umaine.edu/cranberries/files/2010.