

FRESH from the FARM

The Fresh from the Farm featured fruit is

Apple

for educators



Healthy Kids Do Better in School

Studies report improved test scores and memory function among students who eat a variety of colorful fruits and vegetables and get physical activity every day. The goal of Smart Choices is to help students eat healthy and be active.



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. Apples can be red, yellow or green.

Red fruits and vegetables help maintain a healthy heart, memory function and urinary tract health.

They may also lower the risk of some cancers. Examples include red apples, red peppers, beets, tomatoes, red grapes and pomegranates.

Yellow/orange fruits and vegetables help maintain a healthy heart, vision health and a healthy immune system. They may also lower the risk of some cancers. Examples include yellow apples, apricots, oranges, sweet potatoes and pumpkins.

Green fruits and vegetables help maintain vision health and strong bones and teeth. They may also lower the risk of some cancers. Examples include green apples, green grapes, kiwifruit, artichokes, avocados and green beans.

For more information, visit:

www.fruitsandveggiesmatter.gov
www.harvestofthemonth.com

Taste Testing with Minnesota Apples

Taste testing activities enable students to experience the featured produce with their senses, engaging them in the learning process and creating increased interest, awareness and support for eating more fruits and vegetables.

Tools:

- Variety of quartered apples (*refer to page 2 for Minnesota Grown varieties*)
- One apple variety per every four students
- Graph paper and colored pencils (*To prevent browning, keep quartered apples in apple juice until start of activity*)

Activity:

- Observe, touch, smell and taste each apple variety
- Develop a color graph using appearance, texture, smell, flavor and sound
- Compare and contrast the varieties

Cooking in Class:

Apple Yogurt Trifle

Ingredients: 32 tastes - 1/8 cup

- 4 Granny Smith apples, cored and finely chopped
- 8 (8-ounce) containers lowfat cherry yogurt
- 3 cups Grape-Nuts cereal
- Small paper cups

Evenly divide four of the yogurt containers and half of the chopped apple pieces among cups to provide each student with a taste. Add two tablespoons of Grape-Nuts to each cup, then top evenly with layers of remaining yogurt, chopped apple and a sprinkle of Grape-Nuts. Refrigerate at least 15-20 minutes before serving to allow cereal to soften.

*Adapted from: www.bestapples.com/recipes
More recipes at usapple.org*



Recommended Daily Amounts of Fruits and Vegetables*

Ages 5 - 12	Ages 13 & older
2 1/2 - 5 cups per day	3 1/2 - 6 1/2 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 Medium Apple (154g)

Amount per serving

Calories 80 Calories from Fat 2g

% Daily Value

Total Fat 0g **0%**

Saturated Fat 0g **0%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 2mg **0%**

Total Carbohydrate 21g **7%**

Dietary Fiber 4g **15%**

Sugars 16g

Protein 0g

Vitamin A 2%

Calcium 1%

Vitamin C 12%

Iron 1%

Source: www.nutritiondata.com

Dakota
COUNTY

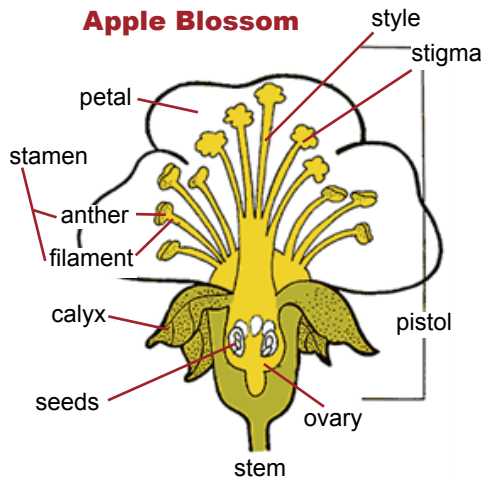


How Do Apples Grow?

Apple trees grow in the temperate regions of the world. Apple trees are best adapted to places where the average winter temperature is near freezing for at least two months, though many varieties can withstand winter temperatures as low as -40 F.

Apple trees are deciduous. In late spring, white blossoms appear from the tiny buds on apple tree branches for about nine days and produce pollen and nectar. Bees help to cross-pollinate the blossoms, the first step in forming an apple.

The seeds are distributed among an apple's five seed chambers, called carpels, found near the core. Seed development stimulates the apple tissue development. Apples continue to grow until late summer when they are ready to harvest and eat.



The flowers have many parts that are crucial to the formation of apples:

Sepals – five green, leaflike structures that make up a flower's calyx

Petals – the part of a flower that attracts insects by their color and scent

Stamens – the male reproductive part made up of an anther and filament

Anther – the part of the stamen that produces pollen

Filament – the stalk of the stamen

Pistil – female part of the flower, made up of stigma, style and an ovary

Stigma – the top of a flower's pistil

Style – the part of a pistil that connects the stigma and the ovary

Ovary – the rounded base of the pistil, inside of which are five compartments each containing two ovules, female reproductive cells that can become seeds

Source: www.usapple.org/educators/applestore/4-6guide.pdf



Reasons to Eat Apples

Apples are:



- A good source of fiber and Vitamin C. Fiber helps maintain steady blood sugar levels and may help prevent cancer.
- A source of potassium, which helps maintain a healthy heart.
- A source for important phytochemicals, antioxidants, iron, calcium and Vitamin A.

What's in a Name?

Pronunciation: ˈæpəl

Family: manzana

Genus: *Rosaceae*

Species: *M. domestica*



Apples are the fruit of plants of the genus *Malus* in the family Rosaceae (rose family). Domestic or table apples are of the species *M. domestica* and are one of the most widely cultivated tree fruits.

Malus sieversii is the wild ancestor of *M. domestica*, and its trees can still be found in the mountains of Central Asia. In fact, the former capital of Kazakhstan, Almaty, means "father of the apple." Wild apples (common name for *M. sieversii*) resist many diseases and pests that affect domestic apples, and are often researched and used in the development of new disease-resistant apples.

For more information, visit: www.urbanext.uiuc.edu/apples

Just the Facts

Apples are best when eaten with the peel, as that is where most of the fiber and antioxidants are found. Almost one-half of all apples consumed are eaten as applesauce, apple juice and jellies or jams. Apples can even be used to replace fat and butter in baked goods. (Replace shortening or oils in baking with an equal volume of applesauce plus one-third of the oil called for in the recipe.)

A Slice of Apple History

Apples have existed throughout recorded history and are believed to have originated in the Caucasus, a mountainous area between what is now the Black and Caspian Seas. The people of that region are commonly considered the ancestors of most of the people of modern Europe, Persia, Afghanistan and India.

The Stone Age peoples of Europe cultivated apple trees. In 3,000 BC, the ancient lake dwellers of northern Italy and Switzerland also grew apples, as did the Greeks and Romans. When the Romans conquered England, they brought the art of apple cultivation with them.

Spaniards brought apples to Mexico and South America. The Pilgrims of Massachusetts Bay Colony planted apple seeds in 1629. Pioneers carried apples west as they moved inland, and Native Americans planted trees from seeds they had received at white settlements. John Chapman, better known as Johnny Appleseed, started many apple orchards throughout Ohio and Indiana in the early 1800s.

Source: www.usapple.org



Home Grown Facts

The apple industry in Minnesota was established in the mid 1800s. University of Minnesota researchers have cultivated several original varieties of apples including Frostbite, Sweet Tango, Snowsweet, and Zestar. The Honeycrisp apple was named the official state fruit in 2006.

The top varieties grown in Minnesota include Cortland, Fireside, Haralson, Honeycrisp, McIntosh, and Regent. Thirty five states in the U.S. are involved in apple production. The top five apple producing states include Washington, New York, Michigan, Pennsylvania, and California. Minnesota ranks 25th.

Sources: www.minnesotaapple.org and *USDA National Agricultural Statistics Service*

Physical Activity Corner

Healthy nutrition is only one part of the equation to achieving optimal learning in the classroom--physical activity is the other part. Children should engage in at least one hour of physical activity every day to stay fit both mentally and physically. Dedicate the month of October to playing a different game or activity, like Grab the Apple!, each week in or out of the classroom.

Grab the Apple!

Objective:

Develop listening and fine motor skills (reflexes)

Supplies:

- Boxes and apples (one apple and box per two students)
- Whistle or music

Preparation:

- Pairs sit cross-legged on floor facing each other, hands on knees
- Place box, with apple on top, between pairs
- Use START (whistle/music) cue to lead activity

Activity:

- On START cue, grab the apple before partner

Variations:

- Call out a specific hand to grab the apple
- Start with hands on shoulders
- Start in sit-up position (on back, knees bent)
- Start in push-up position (on stomach, face down)

Go Farther: Ask students to think of different starting positions to try.

Student Sleuths

- Why is fiber important?
- Why do apples float in water?
- Apples contain natural fructose.
What is natural fructose and what are its benefits?
- What does the color of an apple's skin tell you about the environment where it was grown?
- Map the geographical regions in Minnesota where apples are grown.
- List the top five varieties of apples commercially produced in Minnesota and the counties that grow them.

Source: www.extension.umn.edu/distribution/horticulture



Cafeteria Connections

Most apples served in cafeteria meals are Washington Delicious apples. Have students investigate what types of apples are used in their school cafeteria. Then, write letters to the child nutrition staff listing the benefits of other varieties (including Minnesota grown) and ask them to consider serving these.

Encourage students to identify apples in books they read. The class that reads the highest number of different books containing apples receives an apple dessert party.

For recipes, visit www.usapple.org

For more ideas, reference: *Fruits and Vegetables Galore, USDA, 2004.* www.nal.usda.gov/kids
www.agclassroom.org

Legend of Johnny Appleseed

Born September 26, 1774 in Massachusetts on the eve of the American Revolution, John Chapman became the legendary "Johnny Appleseed." He spent almost 50 years of his life in the American wilderness planting apple orchards in Illinois, Kentucky, Pennsylvania and Ohio.

Johnny Appleseed was known as a kind and generous man. He explored the frontier on foot, planting apple trees and selling them to the settlers on the plains for a few pennies each, or in exchange for clothing. Some settlers had no cash, and from those he accepted a simple promise to pay at a later date. Few failed to keep their word. Chapman died in 1845, but even after 200 years, some of his trees still bear apples.

Literature Links

- **Up, Up, Up! It's Apple-Picking Time** by Jody Fickes-Shapiro (Holiday House, 2003)
- **An Apple a Day** by Melvin Berger (Newbridge Educational Publishers, 1993)
- **Apple Tree** by Barrie Watts (Silver Burdett, 1987)
- **The Life and Times of the Apple** by Charles Micucci (Scholastic, 1995)
- **The Crooked Apple Tree** by Eric Houghton (Barefoot Books, 1999)
- **The Legend of Johnny Appleseed** by Steven Kellogg (Harper Collins, 1988)
- **The Story of Johnny Appleseed** by Ailiki (Aladdin, 1987).
- **Folks Call Me Appleseed John**, by Andrew Glass, Andrew. (Doubleday, 1995)
- **Johnny Appleseed: My Story** by David Harrison, (Random House, 2001)



Recipe Corner:

Apple - Jicama* Salad with Pepitas

Recipe by Chef Alexandra I. Lopez
and the U.S. Apple Association

Salad:

- 3 apples, cored, unpeeled and small diced (suggest Cripps Pink, Jonagold or Braeburn varieties)
- 1 small jicama (peeled and diced)
- 1 medium cucumber, unpeeled, seeded and small diced
- 1/4 cup red onion, finely minced
- 1/4 cup toasted pepitas (pumpkin seeds)
- 1 Tbsp. fresh chives, finely minced

In a small bowl, whisk together apple juice, vinegar and agave nectar with salt. Drizzle in the olive oil and continue to whisk until incorporated. Set aside.

In a large bowl combine apples, jicama, cucumber, onion, pepitas and chives. Stir in the vinaigrette and combine well to coat. Refrigerate for 20 minutes before serving. Garnish with more pepitas and chives.

Servings: 4 - 6

Prep time: 30 minutes

*Jicama (hee-kuh-muh) is a sweet, root vegetable that looks like a turnip.

Vinaigrette:

- 1/4 cup apple juice
- 1 Tbsp. apple cider vinegar
- 1 tsp. light agave nectar or 1/2 tsp. honey
- 2 Tbsp. olive oil
- 1 tsp. salt

Adventurous Activities

Field Trip:

Take students on an apple-picking field trip or to a farmers' market, or even bring the field trip to the school. For more information on Farm to School programs, visit www.mn-farmentoschool.umn.edu.

Problem Solving:

Use apples in math equations to demonstrate addition and subtraction of fractions.

Creative Writing:

Have students interview and document their parents' favorite apple stories, memories and recipes.

Science Investigation:

Oxidation is the browning reaction that occurs when the atoms in an apple come in contact with air and lose electrons.

Cut two apples in half. Pour one tablespoon of lemon juice over the first half. Pour one tablespoon of water over the second half. Pour one tablespoon of apple juice over the third half. Do not pour anything over the fourth half. Leave all four halves in a visible spot in the classroom. Have students note the differences in the browning after one hour to see which method works best and why.

Source: www.usapple.org/educators/applestore/index.cfm

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School Garden: Savvy Seed Saving

As fall weather spells an end to most school gardens, encourage students to become seed detectives by identifying, collecting and saving their own seeds from the garden or the wild.



Helpful Hints:

- Saving seeds of annual plants may make the most sense, since these complete their life cycle, from seed to seed, in one year.
- Moist seeds don't keep well, so be sure to dry collected seeds in a well-ventilated place on paper towels for about one week.
- Store seeds in jars in a cool location (i.e., refrigerator, freezer).
- Some fruits and vegetables to consider: melons, tomatoes, beans, peas, peppers, pumpkins, squash.

Digging Deeper:

- Have students create their own packages of seeds they've saved. Students can give them away as gifts, sell them as part of a school fund-raiser or trade them with another classroom or school.

For more ideas, visit: www.kidsgardening.com