

# Apple Lesson

## Goals

Students will...

- Increase their familiarity with apples.
- Eat apples when offered them.
- Increase their awareness of the environmental benefits of composting.
- Increase their understanding of nutrition.



## Objectives

Students will...

- a. Identify the number one apple producing state
- b. Explain the origin of apple growing in the U.S
- c. Locate orchards on a Maine map
- d. Write a public service announcement (PSA) for elementary students to eat apples for snacks instead of sugary foods
- e. Increase servings of a recipe using math strategies
- f. Participate in composting activities.

## Lesson Activities

Review points about safety, sanitation, and cooperation

- Introduce apples
- Background information on apples
- Lessons from the Farm
- Cook apple crisp
- (Form groups of 4-6 students)
- Do compost activity while food is cooking
- (See compost lesson for mini-lessons)
- Eat
- Wrap-up
- Distribute copies of recipes and challenge sheets to students
- Clean-up

## Other Apple Activities

Nutrition science lesson

Types of apples

Global and regional mapping

Apple fact sheet

Writing ideas

Additional recipe

## Background Information on Apples



### Did you know that...?

#### **A pilgrim planted the first apple tree**

Pilgrims from the Massachusetts Bay Colony planted the first apple tree in the U.S. In the early 1800s, John Chapman, better known as Johnny Appleseed, traveled west and planted apple seeds and trees so that the new settlers would always have apples to eat.

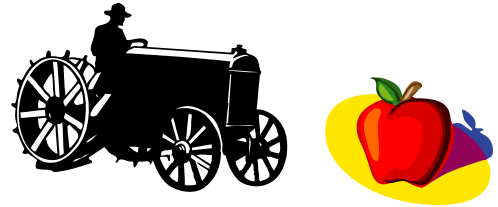
#### **Pomology means the science of growing apples**

The science of growing apples is called pomology. It takes around five years for an apple tree to produce apples. In the winter, apple trees rest. In the spring, the warmer weather allows apple blossoms to flower and grow. Honeybees are attracted to the sweet scent of the apple bud and the nectar in the flower. When the pollinated apple blossoms fall off, baby apples begin to grow. In the fall, apples are fully grown and have had time to ripen. Most of America's apple crop is harvested by hand, primarily in the months of September and October.

#### **There are 2,500 varieties of apples**

There are 2,500 varieties of apples that grow throughout the United States. Apples come in a range of different flavors. Apple growing is an important industry in America. Washington State is ranked number one in the number of bushels grown, followed by New York. Worldwide, the United States of America is ranked second in apple production, after China.

## Lessons from the Farm – Apples



In the fall everyone thinks of big shiny apples to eat and to make all kinds of yummy things. When you pick your own or buy apples, do you ever wonder how they are grown?

The season starts way back in the cold part of the year. Apple farmers start pruning the trees during January or February. Pruning is cutting off the dead branches and some of the new growth so that sunlight can get to all parts of the tree. Apples need sunlight in order to have good color.

Apple trees are fertilized in April. Along toward the end of May the apple trees blossom. The blossoms need to be pollinated in order to produce apples. Apple farms can hire bees from a local apiary. Some farms use 12 hives of bees. If you have a large orchard, the hives can be scattered in different locations. The bees are very busy during bloom, which lasts about a week. After the bees pollinate the trees, the bees go back to the apiary. Within a few days you can see tiny apples. The apple trees have to be sprayed to keep disease and insects from attacking the apples and the trees. Many apple farms use a big machine that is hauled behind a tractor to mow the grass under the trees and between the rows. There are more than 3000 kinds of apples grown worldwide. Some are very old varieties like Wolf Rivers and Russets, and others, like Paula Reds, are quite new.

A few kinds of apples ripen in August, but most of the crop is picked during September and October. Apples have to be handled carefully so they won't get bruised. They are taken to the apple barn in wooden boxes. There they are sorted, packed in bags and boxes, and are often sold at farm stores.

You can also use the apples to press cider. Find out where there is an apple farm near you to pick or buy apples and apple cider.

## Materials and Preparation

### Food needed for Apple Brown Betty (for 4 groups)

- 2 cups butter, softened
- 2 cups rolled oats
- 2 cups flour
- 3 cups brown sugar (packed)
- 4 teaspoons nutmeg
- 4 teaspoons cinnamon
- 1 cup water
- 16 cups of apples, peeled and sliced (Cortland apples recommended)



### Materials needed (for 4 groups)

- 8 potholders
- 4 mixing forks
- 8 mixing bowls
- 8 sets dry measuring cups
- 4 sets measuring spoons
- 4 knives
- 4 cutting boards
- 4 apple peelers
- 4 baking pans (9-inch square)
- Cleaning towels, napkins
- 4 serving spatulas
- Plastic forks and cups
- Paper plates
- Drinks for students
- Copies of recipes for each student
- Copy of challenge sheet for each student
- Copy of apple fact sheet for each student
- Copy of writing ideas sheet for each student

## **Each station should have the following:**

### Food

- 1/2 cup of butter, softened
- 1/2 cup rolled oats
- 1/2 cup flour
- 3/4 cup brown sugar (packed)
- 1 teaspoon nutmeg
- 1 teaspoon cinnamon
- 1/4 cup water
- 4 cups of apples, peeled and sliced (Cortland recommended)

### Materials

- 2 potholders
- 1 mixing fork
- 2 mixing bowls
- 2 sets dry measuring cups
- 1 set measuring spoons
- 1 knife
- 1 cutting board
- 1 apple peeler
- 1 baking pan (9-inch square)
- Cleaning towel
- 1 serving spatula
- Plastic forks, cups, and paper plates
- Copy of recipes

**When in season use Maine apples from your local orchard.**

## Classroom Recipe for Apple Brown Betty (Apple Crisp)

### Ingredients:

1/2 cup butter, softened  
1/2 cup rolled oats  
1/2 cup flour  
3/4 cup brown sugar (packed)  
1 teaspoon nutmeg  
1 teaspoon cinnamon  
1/4 cup water  
4 cups of apples, peeled and sliced (Cortland recommended)



**When in season use Maine apples from your local orchard.**

### Student Cooking Activities

**Note:** This recipe requires the use of knives and ovens.

Preheat oven to 375°F.

Combine the brown sugar, oats, cinnamon, nutmeg, flour, and butter and stir with a fork until well mixed and crumbly.

Add one third of the apples, then one third of the crumb mixture to a greased, 9x9 inch pan.

Repeat until all apples and crumb mixture are added.

Pour the 1/4 cup of water over the mixture.

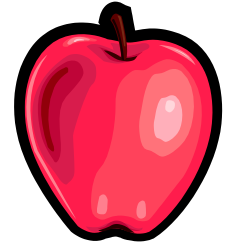
Bake for 30 minutes at 375°F.

Yield: 6 servings

## Apple Student Activity Sheet

Name \_\_\_\_\_

The recipe for Apple Brown Betty makes six servings. If you needed to make enough Apple Brown Betty for 18 people, you would need to increase the amount of ingredients so that you would have enough.



How many times would you need to multiply 6 servings to get 18 servings? \_\_\_\_\_

Look at the list of ingredients. Each ingredient needs to be increased. Multiply each fraction by the whole number you have written above and fill in the blanks.

Ingredients:

New Amount	Amount	Ingredient
	$\frac{1}{2}$ cup	butter, softened
	$\frac{1}{2}$ cup	rolled oats
	$\frac{1}{2}$ cup	Flour
	$\frac{3}{4}$ cup	brown sugar (packed)
	1 teaspoon	Nutmeg
	1 teaspoon	Cinnamon
	$\frac{1}{4}$ cup	Water
	4 cups	Apples, peeled and sliced (Cortland recommended)

## Nutrition Science Lesson - Apples

### Types of Apples

#### **Discussion**

Apples can be divided into three categories:

1. Best for eating raw
2. Best for cooking purposes
3. Good for both eating and cooking

Characteristics of an eating apple: They are crisp and juicy but they do not hold their shape or maintain their flavor when they are cooked.

Characteristics of a cooking apple: They maintain their shape and flavor when cooked, but they do not have good eating qualities.

#### **What's Inside** ([www.nyapplecountry.com](http://www.nyapplecountry.com))

Apples are absolutely fat-free!

One apple provides 1/5<sup>th</sup> the amount of fiber needed in one day.

Apples are loaded with pectin a soluble fiber that aids digestion.

Apples give a more even energy boost than high sugar snacks.

Apples provide vitamins, minerals and antioxidants, which help to keep our cells healthy.



## Characteristics of some leading varieties of apples

Variety	Size	Appearance	Use
Baldwin	Medium to Large	Medium red, hard, crisp, juicy	Raw, cooking
Cortland	Medium to Large	Red, white flesh, tart	Raw, cooking, salads, fruit cup
Delicious	Medium to Large	Red or golden, five knobs on blossom end, sweet, firm, tender	Raw
Granny Smith	Medium to Large	Greenish yellow, firm, juicy	Raw
Jonathan	Small to Medium	Tender, crisp, juicy,	Raw, general cooking
McIntosh	Medium	Medium red, hard, crisp, juicy	Raw, general cooking
Northern Spy	Large	Bright-striped red, juicy, moderately tart, firm, crisp, tender	Raw, general cooking
Rome Beauty	Medium to Large	Red-striped, firm, crisp, mealy when overripe	Baking
Macoun	Small to Medium	Medium red, hard, crisp, sweet-tart	Raw, cooking
Empire	Med	Deep red, mildly tart sweet	Snacks, dessert
Honeycrisp	Large	Red over yellow, sweet-tart	Desserts, jams

### Demonstration

Chose three to four different types of apples for the students to taste. Slice apples into sections. As a class, taste each type of apple and discuss differences.

Pick a general cooking apple and an eating apple. Make applesauce to show the differences between a cooking apple and an eating apple. Discuss the texture, taste, appearance, smell, feel, and color of each type of applesauce.

## Applesauce Recipe

12 medium apples  
1 cup water or 1 cup of apple juice  
1/2 c sugar  
1 tbsp. lemon juice  
1/2 tsp. cinnamon



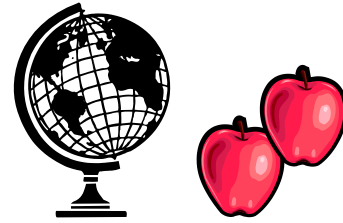
**Use Maine apples when available.**

**Note:** This recipe requires the use of knives and ovens.

Wash, peel, core and slice apples, and place in a large pot. Add the apple juice or water. Cover over medium heat until soft. Remove from stove and let cool. Add the sugar, lemon juice, cinnamon and mix together.

## Global and Regional Mapping

### Apples



#### Maine Map

Favorite Maine apple varieties include McIntosh, Cortland, Macoun, Jersey Mac, Spartan, and Northern Spy. Other Maine varieties include Paula Red, Wealthy, Gala, Prima, Empire, Red Delicious, Golden Delicious, Winter Banana, JonaGold, Spencer, Honeycrisp, and Mustsa/Crispin. Each variety offers a different taste and texture.

Help students to find on a Maine map where some Maine apple orchards are located:

Androscoggin County – Auburn, Turner, and Cumberland

Cumberland County – Raymond, Standish, and Cumberland

Franklin County – Wilton

Hancock County – Ellsworth

Kennebec County – Vassalboro, North Vassalboro, Monmouth, Kent’s Hill, Manchester, and East Winthrop

Knox County – Whitefield, Jefferson, and Dresden

Oxford County – South Hiram, Waterford, and Bethel

Penobscot County – Lincoln, Brewer, Dixmont, Chester, and Garland

Sagadahoc County – Richmond

Somerset County – Fairfield and Madison

Waldo County – North Searsmont, Thorndike and Winterport

York County – Limington, Springvale, Acton, Bar Mills, and Wells

#### United States Map

Help students locate the leading apple growing states on a United States map.

Washington

New York

Michigan

California

Pennsylvania

Virginia

North Carolina

West Virginia

## Local Harvest Calendar

Using the harvest calendar, discuss the four seasons of apple growing with students.

### **Spring**

The apple trees are waking up. Leaves start growing and white flower blossoms pop out. Honeybees visit the sweet-smelling blossoms and spread pollen from flower to flower. When the blossoms fall off the pollinated flowers, baby apples begin to grow in their place.

### **Summer**

The apples continue to grow all summer. Apple blossoms for the following year are being formed on new limbs.

### **Fall**

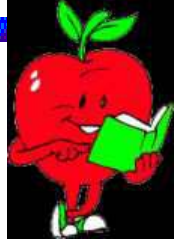
The apples are now fully grown and ripened. Picking begins in August and the last of the fruit comes off in October.

### **Winter**

During the winter, apple trees no longer have leaves, flowers, or apples. Just as you sleep every night to store up energy, apple trees sleep all winter to store energy to make apples for the fall.

Date \_\_\_\_\_ Name \_\_\_\_\_

## Apple Fact Sheet



1. Who planted the first apple tree in the United States?
2. What state is ranked number one in apple production?
3. In which season are apples harvested?
4. What is pomology?
5. Why are apples a good snack food?

## Writing Ideas - Apples



1. What did you like or dislike about this lesson?
2. Write a public service announcement that will persuade elementary students to eat apples for snacks rather than sugary snack foods. Announcements should be one paragraph in length and contain at least 3 important apple facts. Be prepared to read your announcement aloud. (Perhaps a PSA could be read aloud as part of school-wide morning announcements.)
3. Cook the apple recipe for your family or friends. What did they think? Did they like it? Were they surprised?
4. Come up with your own ideas.

## Apple Challenge Sheet



I agree to try apples the next time they are served to me in the cafeteria or at home.

I agree to eat apples	I did it! I ate apples!