

Taste and Teach

July - Pears



Five **Fun Facts** About Pears!

- It takes five to seven years for a pear tree to produce fruit.
- A medium pear provides 16 percent of the daily requirement for dietary fiber.
- The Greek poet, Homer, referred to pears as a “gift from the gods.”
- The pear is one of the few fruits that does not ripen on the tree, so growers pick the fruit when it is mature, but green, and not yet ripe.
- Consumers can initiate ripening in pears by storing them at room temperature.

Three **Fun Teaching Ideas!**

- Slice a pear in half. Find the stem, core, shoulder, flesh, seeds, skin, and calyx.
- Examine pear fruit cells under a microscope. Observe the sclerenchyma cells, which give pears their unique texture.
- Create a collage of food products that contain pears.

Explore all the great pear resources in this section!

Commodity Fact Sheet

Pears

Information compiled by the California Pear Advisory Board

How Produced – Rich soil, plenty of water, warm days and cool nights are the best conditions for pear growth. Pear trees are in production for an average of 50 to 75 years, although some pear trees still produce after 100 years.

In winter, trees are pruned and replacement trees are planted. It takes five to seven years for a tree to produce fruit. Pear trees are unique since they are self-pollinating. They do not need bees for this process. The California pear harvest begins in late June and continues through September. The pear is one of the few fruits that does not ripen on the tree, so growers pick the fruit when it is mature, but green, and not yet ripe. Pears are harvested by hand, placed into bins and transported to a packing house. The pears are graded for quality, sorted by size, and packed for the fresh market or sent to a processing facility. Next, pears are cooled to slow down the ripening process. To initiate ripening, pears are brought to room temperature.

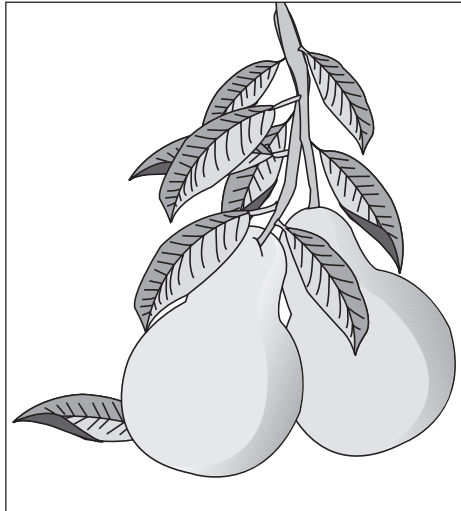
Pears are processed into canned pears, fruit cocktail, juice concentrate, and baby food products, and are often dried. They can be found in such items as fruit juices, baked goods, and snack foods like fruit roll-ups.

History – In eighth century B.C., pears captured the praise of the Greek poet Homer, who referred to them as a “gift of the gods.” The Romans proceeded to use grafting techniques to develop more than 50 varieties and introduced cultivated pears into other parts of Europe.

The Bartlett pear was developed in England in the seventeenth century by a schoolmaster named John Stair. He sold some cuttings to a horticulturist named Williams, who further developed the variety and renamed it after himself. Early Americans brought pear seedlings across the Atlantic to the Massachusetts Bay Colony. In 1812, nurseryman Enoch Bartlett discovered the pear variety and, unaware of the pear’s true name, distributed it as a “Bartlett.” However, it is still known as the “Williams” pear around the world. Bartlett cuttings eventually came west when the forty-niners headed for the great California Gold Rush and continue to grow in California today.

Varieties – The pear, scientifically known as *Pyrus communis*, is a member of the rose family. The Bartlett comprises

71% of California’s pear acreage and 78% of its tonnage. The Bartlett has a teardrop shape with thin skin that turns from green to yellow when it ripens. When California Bartletts are golden yellow, they are ready to eat. Remember to handle gently to avoid bruising.



Other California varieties include Bosc, Seckel, Comice, Red Pear, French Butter, Golden Russet, and Forelle. Each has its own distinct shape, color and flavor. The Red Sensation variety was discovered as a “bud sport” on a Bartlett tree. A bud sport is a tree limb that naturally transforms and develops a different fruit variety from that of the original.

Commodity Value – California produces 18% of all pears grown in the United States, ranking number three in the nation. California produces approximately 121,000 tons each year and adds almost \$60 million to its economy. California exports more than 17% of its fresh crop. Canada and Mexico receive more than 80% of California’s exports.

Top Producing Counties – Pears are grown in two primary growing regions of Northern California on approximately 6,000 acres. The regions are divided into “early” and “late” districts based on the timing of the harvest. The early district, called “River Pears,” spans the Upper Sacramento Valley of Sutter and Yuba counties and along the Sacramento River Delta in the counties of Sacramento, San Joaquin, Yolo, Solano, and Contra Costa. The early district produces about two-thirds of California’s annual pear crop. The late district, called “Mountain Pears,” spans Mendocino, Lake, and El Dorado counties. This area produces approximately one-third of California’s pears annually.

Nutritional Value – One medium pear provides 16% (four grams) of the daily requirement for dietary fiber, 10% of the daily requirement of vitamin C, and a healthful source of potassium. One pear has approximately 100 calories and contains no cholesterol, sodium, or saturated fat.

For additional information:
California Pear Advisory Board
(916) 441-0432
Website: www.calpear.com



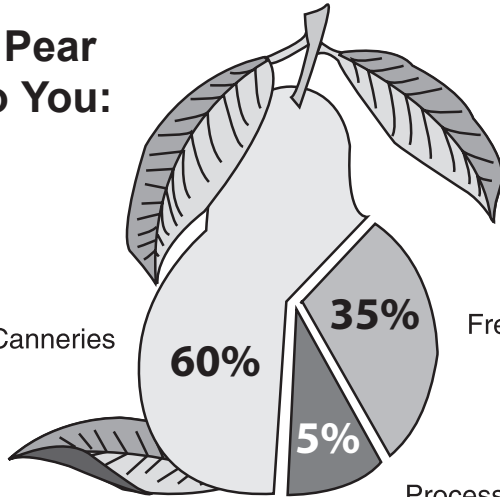
CALIFORNIA
PEARS

Pear Activity Sheet

From Pear Tree to You:



Canneries



Fresh market



Processed into dried fruit, baby food, and juice products.

Lesson Ideas

- Slice a pear in half. Find the stem, core, shoulder, flesh, seeds, skin and calyx.
- On a map of California, identify the River Pear and Mountain Pear districts.
- Dehydrate pears and calculate the % water loss.
- Compare the color, taste, and texture of various pear varieties. Graph or chart your results.
- Examine pear fruit cells under a microscope. Observe the sclerenchyma cells, which give pears their unique texture.
- Dip the tips of your thumb and little finger on an inkpad and make pear prints.
- Write a song or poem about pears highlighting their unique characteristics.
- Create a collage of food products that contain pears.

Fantastic Facts

1. It takes five to seven years for a pear tree to produce fruit.
2. The pear is one of the few fruits that does not ripen on the tree, so growers pick the fruit when it is mature, but green, and not yet ripe.
3. Consumers can initiate ripening in pears by storing them at room temperature.
4. The Greek poet, Homer, referred to pears as a "gift from the gods."
5. The Bartlett pear is sometimes called the Williams pear because a horticulturalist named Williams originally developed the variety.
6. A bud sport is a tree limb that naturally transforms and develops a different fruit variety than the rest of the tree.
7. A medium pear provides 16% of the daily requirement for dietary fiber.

Lesson Plan: Ripe for the Taking

Introduction: Since pears do not ripen properly on trees, growers pick pears while they are still green, but mature. Most consumers want to buy Bartletts that are just starting to "break color" from green to yellow, yet only half of grocery chains ripen Bartletts in the backroom. A considerable amount of time and money has gone into informing grocers how to properly ripen pears as well as increase their shelf life. Pears are considered ripe when they are slightly soft when gently pressed on the stem end of the fruit.

Objective: Students will compare the ripening rates of pears under various conditions.

California Standards: CC ELA: W.3-5.4, WHST.6-12.2; NGSS: 3-5-ETS1-1, MS-ETS1-1, MS-PS3-4, HS-ETS1-3

Materials: Unripe pears for each variety you are testing, thermometers, resealable plastic bags, supplies determined by students.

Procedure:

1. Explain to the students that pears ripen best after they have

been picked. Have the students think of variables that may affect the ripening rate of pears and brainstorm a list of variables that can be explored in a classroom setting.

2. Have the students create and perform an experiment that will test one aspect of fruit ripening. One such experiment is described in step 3 below.
3. Make two sets of three pears each in a resealable plastic bag. Place one bag in the refrigerator and one on a countertop. Record temperatures. Over the next few days, record temperatures, and changes in fruit color and firmness. Compare the ripeness of the two sets of fruit.
4. Have the students discuss the results of each of the performed experiments.
5. Individually or as a class, have the students write a memo or cardboard box cover that explains to the grocer how to store and ripen pears. Or, have students design an ad that explains to consumers how to ripen pears at home.



Tasty Testing

Investigate what influences your decision about what you buy to eat.

Materials

- Three to five different kinds of pears
- Small cups for sampling
- Chart paper to collect brainstormed criteria
- Sticky dots or markers for voting

Tip

Try taste tests using other products.

Preparing Taste Test

1. Explain that consumers make decisions that are influenced by a variety of criteria including appearance, taste, advertising, and cost.
2. Brainstorm a list of criteria that would make a good pear (size, color, variety, taste, texture). Have students vote for which criteria they think is most important.
3. Prepare the pears for the taste test by cutting enough for each student to taste each variety. Serve immediately or treat with lemon juice to prevent browning.
5. Place each pear variety (3-5) on a separate numbered plate.
6. Have students taste each pear and rank them based upon the criteria they determined was the most important.
7. Discuss the results from the taste test.

Classroom Activities

English Language Arts

- Write a new advertising jingle for the winning product highlighting the criteria. Create a 30-second commercial highlighting the product and present it to the class.
- Conduct a market test and write an article with artwork for a consumer report that explains the results. Create a marketing plan, including packaging and target audience.
- Research the career of a marketer. How do these professionals help producers and consumers? Interview someone who has a marketing job.
- If students have a hard time determining what is the most important criteria for the taste tests, have a classroom debate to decide which is the most important.



California Standards

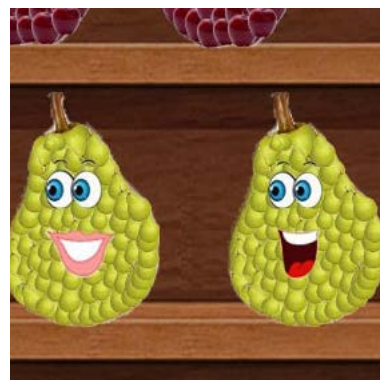
Grades 9-12

ELA CC: SL.9-12.1; W.9-12.2

This lesson can be easily adapted to meet the educational standards for a variety of grade levels.



Imagine this...



Patty Pear on an Adventure

By Juliana Gamache

2011 *Imagine this...* Story Writing Contest Winner

6th Grade, Scott Valley Jr. High

Tracy Dickinson, Teacher

Siskiyou County

One day I woke up very confused. “Where did all of the other pears go?” I thought. I decided to find out.

I hopped off my branch and began to look. “Mom! Dad! Are you there?” I called. I couldn’t see them anywhere so I asked Sir Drools-A-Lot, the dog, if he had any pears.

He said, “I have two pairs in my dog house, come on I’ll show you!”

When we got there it was just a pair of Old Farmer Jenkins’ cotton socks and a pair of Mrs. Jenkins’ running shoes. “Thanks,” I said, “But I was looking for my mom, dad, and all of my friends. Have you seen them? They are red, yellow, and very plump and juicy.”

“Oh,” he said, “You should ask Old Farmer Jenkins, he would probably know.” So I set off to find him.

When I found Old Farmer Jenkins, he was plowing the field with his big green tractor. I asked, “Do you have any pears?”

He said, “Sure, I have some in my shop. He showed me a pair of pliers and a pair of big, brown welding gloves.

I said, “Thanks, but I was looking for my mom, dad, and all of my friends. If you have seen them they are very high in fiber.”

“Oh,” the old farmer said. “Well I think my wife might have one. She is in the kitchen if you want to ask her.” So I headed to the kitchen.

When I got to the kitchen Mrs. Jenkins was dehydrating apples. I said, “Do you have any pears?” Mrs. Jenkins said, “Sure, Patty, I have a pair right here.” She pulled a pair of thick, gold wire glasses from her pocket.

“Thanks,” I said, “But I was looking for my mom, dad, and friends. If you have seen them they are high in potassium.”

“Oh,” said Mrs. Jenkins, “you should try looking at the store in town.” So I headed to town.

When I got to the hardware store, the cashier, Earl, was pricing gardening supplies. I asked, “Do you have any pears?”

He said, “Sure I have some in the back. Come on, I’ll show you.” When we got to the back he showed me a pair of some really nice jeans. Earl said, “These are my finest pair of boot cut jeans.”

I said, “No, not that kind of pair.”

“Well how about a pair of pruning shears?” he said.

“Thanks,” I said, “But I’m looking for my mom, dad, and all of my friends. If you have seen them they are very high in vitamin C.”

“Oh,” said the cashier, “try looking at the Corner Market down the street, I’m sure they will have what you are looking for.” So I started rolling down the street.

When I got to the store the cashier, Donnel, was putting ice cream on the shelf. I asked, “Do you have any pears?”

She said, “Absolutely! They are right over here.”

I said, “Wait! Are you sure that they are the right kind of pears? You know, the ones that are red, yellow, plump, juicy, high in fiber, potassium, and vitamin C—the fruit kind?!”

“Yes!” she said, “and here they are.”

Finally I had found my family! I hopped up on the shelf and told them all about my adventures of the day and all the awesome kinds of pairs I had found.

**Learn more about the “Imagine this.. Story Writing Contest”
by visiting LearnAboutAg.org/imaginethis!**

