

Taste and Teach

April - Avocados



Five **Fun Facts** About Avocados!

- Approximately 90% of the US avocado crop is grown in California.
- San Diego County is California's leading avocado-producing county.
- Avocados are harvested by hand, using special clippers.
- Sometimes avocados are shipped to the store when they are ripe and ready to eat. Other times, avocados are firm, and they need to ripen.
- Avocado trees can grow to be 35 to 50 feet tall.

Four **Fun Teaching Ideas**!

- Watch this video on avocados from CFAITC:
https://www.youtube.com/watch?v=E4gTk_wzBqA
- Turn an avocado into a classroom plant! See the simple instructions and other activities in the *What's Growin' On?* student newspaper.
- Avocados are transported in single-layer cartons called lugs, designed to protect them. Have your students work in teams to create their own package for a single avocado. Test the packages by having students carry the packaged avocados in their backpacks for several days.
- Use the guidelines on the back of the Avocado Fact and Activity Sheet to lead experiments in expediting the ripening process!

Explore all the great avocado resources in this section!

Commodity Fact Sheet

Avocados

Information compiled by the California Avocado Commission

How Produced – California's coastal microclimates are ideal for growing avocados. California Avocados are grown by more than 3,500 farmers on approximately 54,000 acres. A single California Avocado tree can produce 200-300 avocados a year. However, the average tree usually produces approximately 150 avocados. The fruit is harvested from each tree by hand using avocado clippers. On tall trees, ladders up to 30 feet high and poles up to 14 feet long are used to reach the fruit.

The fruit is then carefully placed into large picking bins, which hold 900 pounds of fruit, and transferred to a main road where large "boom" trucks pick up the fruit and haul it to a local packing house. Upon arrival, the avocados are immediately put into a large cold storage room for 24 hours to remove field heat and preserve quality. The fruit is then placed onto conveyor belts for grading and sorting. The avocados are brushed, inspected for quality, and placed into single-layered cartons called flats or double-layered cartons called lugs. Lugs have a consistent weight of 25 pounds. Avocado size classifications are based on how many can fit into one lug. The fruit is shipped in refrigerated trucks to markets across the nation, with the majority of the crop going to California and other western states. A small amount of the crop is exported. Most California Avocados are sold fresh.

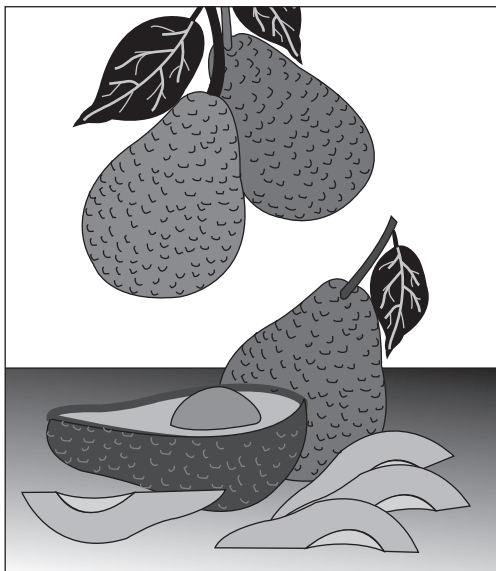
Varieties – Hass avocados account for nearly 95% of California's avocado crop volume. They have thick pebbly skin that generally turns purplish-black during ripening. They are available in peak volume from March through September. Lamb Hass and GEM are Hass-like varieties that are generally available May through October. Other commercially produced varieties include Fuerte, Zutano, Bacon, Pinkerton, Reed and Gwen. These "greenskin" varieties yield to gentle pressure when ripe and are available at different times throughout the year.

Commodity Value – California production averages 300 million pounds each year. Crop value has averaged over \$350 million with some years topping \$400 million.

Top-Producing Counties – Avocados mostly grow on the coastal strip between Monterey Bay and California's southern-most border. These areas are ideal due to the rich soils and mild climates. Approximately 30% of California Avocados are

produced in San Diego County and 37% in Ventura County.

History – The avocado is a Native American plant with a long, distinguished history. Today, the most popular variety is the Hass. The mother tree of all Hass avocados was born in a backyard in La Habra Heights, California.



The avocado (*Persea americana*) originated in south-central Mexico, sometime between 7000 and 5000 B.C. But it was several millennia before this wild variety was cultivated. Archaeologists in Peru have found domesticated avocado seeds buried with Incan mummies dating back to 750 B.C. and there is evidence that avocados were cultivated in Mexico as early as 500 B.C. Spanish conquistadors loved the fruit but couldn't pronounce it and changed the Aztec word to a more manageable aguacate, which eventually became avocado in English. The first

English-language mention of avocado was by Sir Henry Sloane in 1696.

In 1871, Judge R.B. Ord of Santa Barbara introduced avocados to the U.S. with trees from Mexico. By the early 1900s, growers were seeing the avocado's commercial potential and ever since have been hunting for improved varieties. By the 1950s around 25 different varieties of avocados were being commercially packed and shipped in California, with Fuerte accounting for more than two-thirds of the production. Even though Hass was discovered in the 1920s and patented by Rudolph Hass in 1935, it was not until large-scale industry expansion occurred in the late 1970s that Hass replaced Fuerte as the leading California variety.

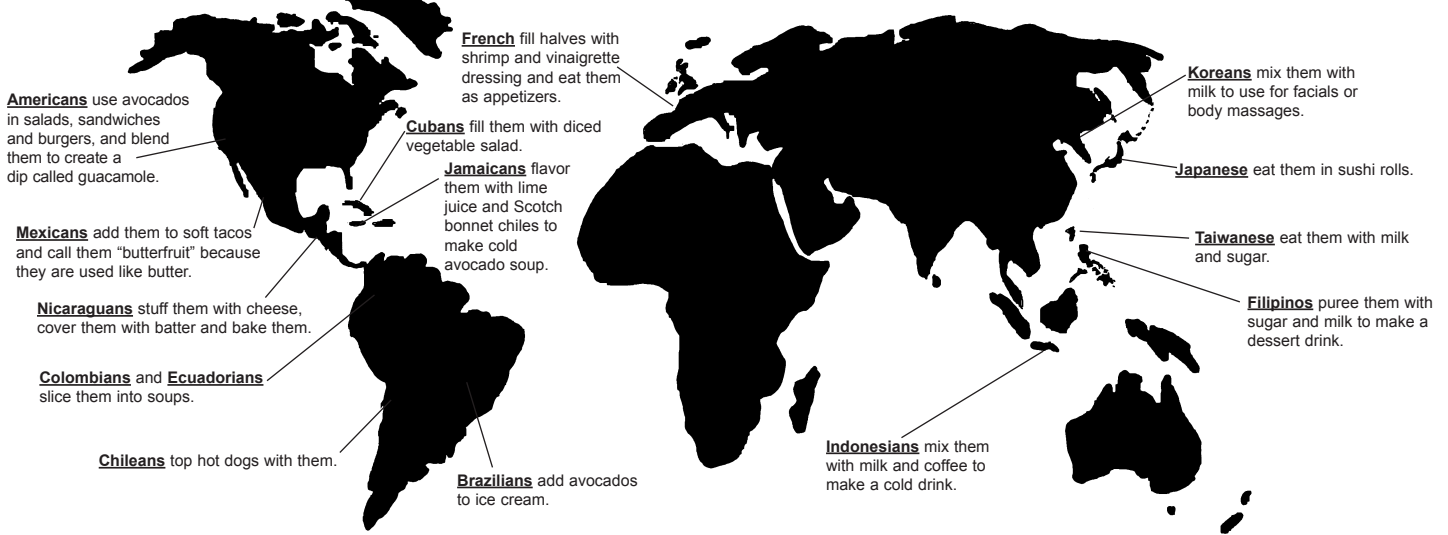
Nutritional Value – California Avocados are a heart-healthy superfood that provide "good" fats to one's diet. Naturally sodium-, cholesterol- and sugar-free, one-third of a medium avocado (50 g) has 80 calories and contributes nearly 20 vitamins and minerals, making it a nutrient-dense choice. Avocados also are a good source of fiber and folate.

For additional information:
California Avocado Commission
(949) 341-1955
Website: CaliforniaAvocado.com



Avocado Activity Sheet

Around the World with Avocados



Lesson Ideas

- Use craft materials to create individual packaging for safe avocado transport. Test your invention by transporting your avocado (via backpack) for several days. Compare your results with others.
- Research which beauty products contain avocados and develop an infomercial to promote an avocado-based product.
- On a California county map, shade in the top-producing counties which produce avocados.
- Make a picture book illustrating the harvesting of avocados.
- Cut open an avocado seed. Identify the embryo, cotyledons and seed coat. Draw a cross-sectional view.
- Record and graph the weekly/monthly prices of avocados.
- Sprout an avocado plant from a seed.
- Cut an avocado in half and remove the fruit and seed. Weigh the skin, meat and seed in grams. What percent of the avocado is edible?
- If a lug of size 48 avocados weighs 25 pounds, how much does one average avocado of this size weigh?

Fantastic Facts

1. Avocados are a fruit.
2. The Hass variety accounts for 95% of California's crop.
3. San Diego and Ventura county are the top producing counties.
4. Fuerte, Zutano, Bacon, Pinkerton, Reed and Gwen varieties all have green skin.
5. Avocados are harvested by hand using special shears called clippers.
6. Avocados are a heart-healthy superfood.
7. Avocados are naturally sodium-, cholesterol- and sugar-free.
8. The Hass avocado is named after Rudolf Hass, a postal worker who discovered it in La Habra Heights, California.

Lesson Plan: Ripening an Avocado

Introduction: Avocados are increasingly shipped ripe and ready-to-eat to retailers and foodservice operators. Some are shipped "firm" and arrive at the point-of-purchase unripened. Ethylene is a natural hormone emitted from fruit such as avocados, bananas, kiwifruit, and apples that causes the unripe fruit to ripen.

Objective: Students will investigate different methods to speed the ripening process of avocados.

California Standards: NGSS: 3-5-ETS1-1, 3-5-ETS1-2, MS-ETS1-1, MS-ETS1-2, MS-PS1-2; CC ELA: SL. 3-12.4

Materials: At least two avocados per group, bananas, apples, kiwifruit, paper bags, plastic bags, and other supplies determined by the students, knife.

Procedure:

1. Explain to the students why many fruits, including avocados, are shipped unripe.
2. Divide the students into groups and have them design an experiment that would expedite the ripening process of avocados. Show them supplies such as bananas, kiwifruit, apples, paper bags, plastic bags, and other items available.
3. Have each group obtain your approval of their experimental design, conduct the experiment and complete a formal laboratory report.
4. At the completion of all of the experiments, have the students share their results with the class. This can be done while the class eats an avocado snack.
5. Discuss the various methods that are used to commercially ripen fruit such as avocados.

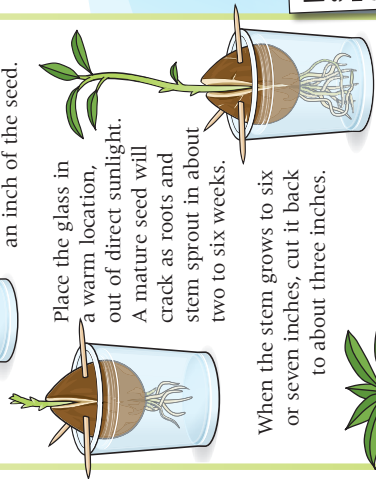
A is for Avocado

Growing your own ornamental houseplant from an avocado seed is fun and easy. Just follow the six steps below.



Wash the seed.

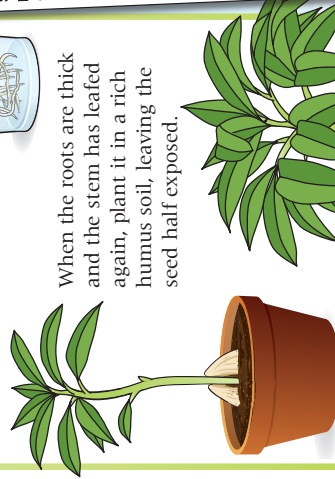
Suspend the seed (broad end down) over a water-filled glass using three toothpicks. The water should cover about an inch of the seed.



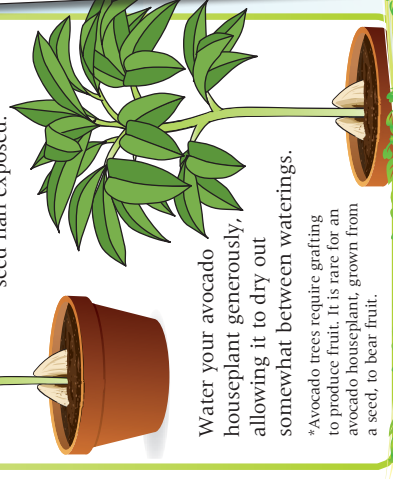
Place the glass in a warm location, out of direct sunlight.

A mature seed will crack as roots and stem sprout in about two to six weeks.

When the stem grows to six or seven inches, cut it back to about three inches.



When the roots are thick and the stem has leafed again, plant it in a rich humus soil, leaving the seed half exposed.



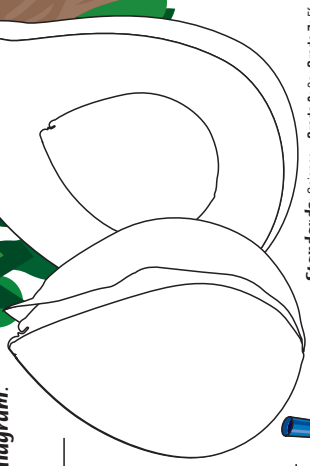
Water your avocado houseplant generously, allowing it to dry out somewhat between waterings.

*Avocado trees require grafting to produce fruit. It is rare for an avocado houseplant, grown from a seed, to bear fruit.

Complete the diagram.

Avocado Anatomy

Cut open an avocado seed. Use online or print resources to identify, draw, and label the seed parts: embryo, hypocotyl, radicle, cotyledons, and seed coat.



Standards: Science – Grade 3: 3a; Grade 7: 5f

Activity

Re-write the recipe to serve your entire class.

Hint: 1 cup = 16 tablespoons.

___ cups orange juice
___ ripe avocados, peeled and seeded
___ ripe bananas
___ cup honey
___ cups non-fat vanilla frozen yogurt

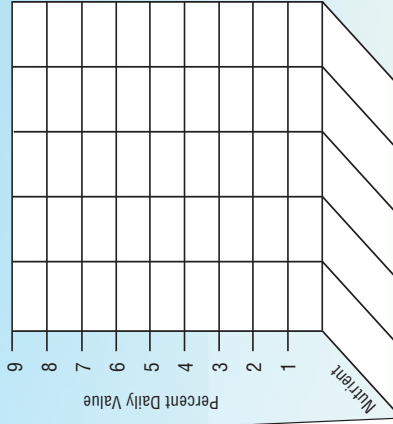
Standards: Math – Grade 3: 3.OA.1, 3.OA.3, 3.OA.7; Grade 4: 4.OA.3, 4.NBT.6, 4.MD.2

Recipe

California Avocado Power-up Smoothie
1 cup orange juice
1 ripe avocado, peeled and seeded
1 ripe banana
1 tablespoon honey
1 cup non-fat vanilla frozen yogurt
Combine orange juice, avocado, banana, and honey in a blender. Cover and blend until mixture is smooth.
Add frozen yogurt; process again until thick and smooth. Serves 3.

Activity

Choose five nutrients from the avocado Nutrition Facts label. Create a bar graph comparing the Percent Daily Value of each nutrient.

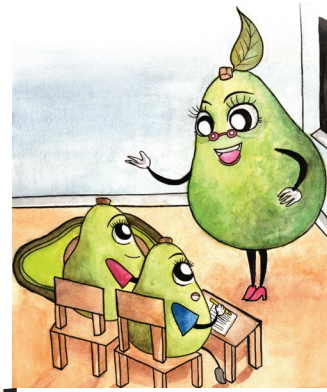


Nutrition Facts

| Amount per serving | | Calories from fat 35 |
|---------------------------------|-----------------|----------------------|
| Serving size 1/5 medium avocado | | Calories 50 |
| | % Daily Value* | |
| Total Fat 4.5g | 7% | |
| Saturated Fat 0.5 | 3% | |
| Trans Fat 0g | | |
| Polyunsaturated Fat 0.5g | | |
| Monounsaturated Fat 3g | 0% | |
| Cholesterol 0mg | 0% | |
| Sodium 0mg | 0% | |
| Potassium 150mg | 4% | |
| Total Carbohydrate 3g | 1% | |
| Dietary Fiber 2g | 8% | |
| Sugars 0g | | |
| Protein 0g | | |
| Vitamin A 0% | • Vitamin C 4% | |
| Calcium 0% | • Iron 2% | |
| Vitamin E 4% | • Thiamin 2% | |
| Riboflavin 4% | • Niacin 4% | |
| Vitamin B6 4% | • Folate 6% | |
| Pantothenic Acid 4% | • Phosphorus 2% | |
| Magnesium 2% | • Zinc 2% | |
| Copper 2% | • Manganese 2% | |

Sources: California Avocado Commission (CaliforniaAvocado.com)
Standards: Health – Grade 4: Nutrition and Physical Activity (NPA) 3.2.N; Grade 5: NPA 1.2.N; NPA 1.6.N; ELA – Grade 6: Reading Informational Text 7; Math – Grade 3: 3.MD.3; 4.MD.2

Imagine this...



Audrey and Ava the Avocados

By Evelyn Does

2021 *Imagine this...* Story Writing Contest Winner

5th Grade, St. Anthony School

Brianna Perez, Teacher

Merced County

Hi, my name is Audrey and my sister's name is Ava. We are twin avocados. We live in California and are six years old. Tomorrow is our first day of school. You might not know this, but, when an avocado is six years old, they start school, and today is our first day! We're really excited to make friends, learn to grow, and look nice while people inspect you to make sure you're good to go. You also get taught what to do while you're in the store and what you do when you are bought.

We will be in school for six years, making us 12 years old when we graduate. A normal avocado usually takes five to eight years to grow from a seed. But, today is our first day! Our teacher's name is Ms. Victoria and she will be our teacher for all of our years in school. After the first two months, I realized that she is nice, but when she's mad, she acts like an old grumpy lady. We made friends with some other avocados named Abby and Alexa. They're really nice and cool.

Six years have passed and today is our last day of school. We're really sad because we got to know our teacher and class really well and now we have to leave. We're also scared because we heard from some other avocados that humans are terrible to avocados. The day has finally come for our new chapter. We're kind of excited to go inside the inspection factory. We just got picked and inspected. Tomorrow we will be bagged and dropped off at the supermarket.

It is the next day and they're bagging my friends and family. We hope we get bagged together. Yes! We got bagged with our family and Abby and Alexa's family! Now we are on our way to the supermarket. We just arrived at the grocery store and in the morning, we are getting put on the shelves. There are white walls and gray shelves and all types of fruits and vegetables getting ready for the customers to come. We're all so nervous, but it's about to open so we have to get ready for the customers. They are so many people passing by and getting a bag of avocados and we are the next bag up!

Finally, we see a mom and her daughter looking at the avocados and we're scared that the rumors are true about humans. The mom and her daughter just picked us up. I'm so scared that the rumors are true. We just got scanned and put in her car. Now, we are on our way to their house. We just got put in the refrigerator and it's a little cold, but we have been in colder weather so it's okay. The mom grabbed the bagged we're in and I wonder what she's going to do. We can see there's a bowl and a spoon. Then, she turned us into guacamole. But, it's not a sad story. When the mom was about to throw our seeds and skin away, the daughter got our seeds and planted them in the ground. Now we are a beautiful avocado tree.

From that day forward, Penny was pie in my hands. We knew we were meant to be; we got married and had four super fritters of our own. We had three boys and one girl: Cortland, Jonathan, Spy, Ida, and our dog, Spartan.

We were hoping one of them would have a super power, but no... it was a complete turnover. Later in life, we did find that Spartan has the super power of elasticity—he could stretch like caramel on an apple and had the ability to poop apple dumplings. That has nothing to do with this story really, just a little crisp humor. With his elasticity power, he protects our family. Spartan is the protector of our orchard. He keeps out all of the crazy cobblers with his stretching abilities. Thanks to him, we will always be a safe bunch.

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

