

ABUNDANT CALIFORNIA

NOURISHING STUDENTS: ENRICHMENT ACTIVITIES FOR GRADES K-5



OVERVIEW

These fun, flexible, cross-curricular enrichment activities help children learn how fruits and vegetables grow, how they get from the field to the plate, and what makes each unique. Through observations, games, and movement, children also build skills in critical thinking, listening, memory, and concentration.



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CALIFORNIA FOOD FOR CALIFORNIA KIDS® downloadable resource

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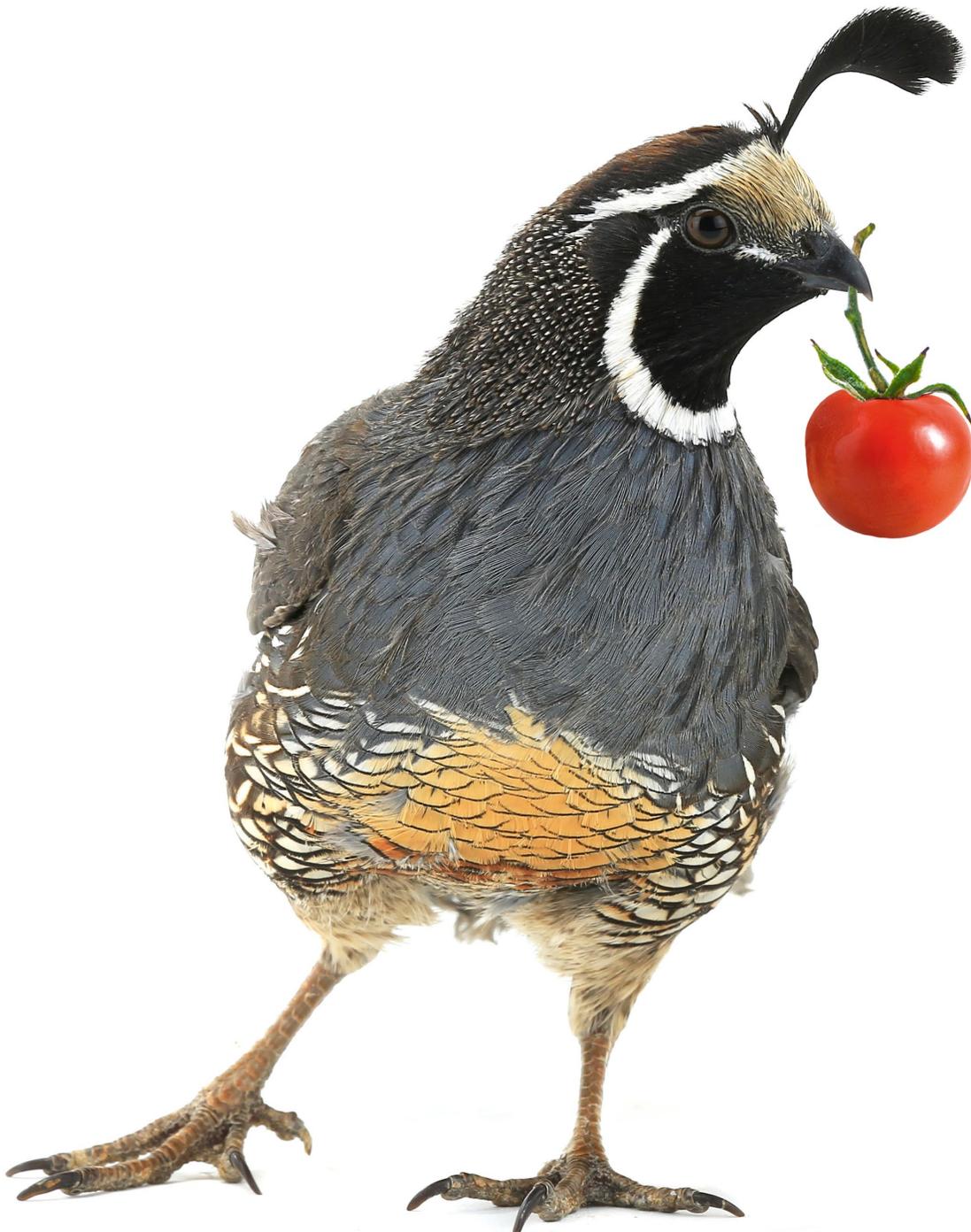
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CALIFORNIA FOOD
FOR CALIFORNIA KIDS®

ABUNDANT CALIFORNIA

NOURISHING STUDENTS: ENRICHMENT ACTIVITIES FOR GRADES K-5



INTRODUCTION

California plays a vital role in feeding the United States and the world. Thanks to its rich soil, multitude of microclimates, and long growing season, California grows nearly half of our nation's fruits and vegetables and exports more than 400 agricultural products globally.

Our children deserve the opportunity to savor this abundance and nourish their bodies with tasty, nutrient-rich, locally grown produce. They benefit from understanding more fully where their food comes from and how it reaches the table, including the phases of planting, growing, harvesting, transporting, and eating.

The enrichment activities in this handbook are designed to engage children in exploring the abundance of California-grown produce. These activities will make after-school, out-of-school, and summer programs more fun and memorable. And they will enable children to participate meaningfully in experiences that promote their health, broaden their understanding, and expand their palate.

We hope these activities enrich your programs and deepen children's experience of California's abundance.

A handwritten signature in black ink that reads "Zenobia Barlow". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Zenobia Barlow

Executive Director, Center for Ecoliteracy

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USING THIS HANDBOOK

ENRICHING ACTIVITIES

The following activities are designed to engage children in experiencing and exploring the abundance of California-grown produce in either informal or formal education settings. They may be used in after-school enrichment programs, out-of-school childcare, summer food service programs, youth programs, and much more.

These cross-curricular enrichment activities help children learn how fruits and vegetables grow, how they get from the field to the plate, and what makes each unique. Through observations, games, and movement, children also build skills in critical thinking, listening, memory, and concentration.

Above all, the enrichment activities are designed to be fun and flexible. They are easy to manage in different settings, use few materials, take little time, and may be conducted inside or outside and with smaller or larger groups.

Two activities are detailed for each fruit and vegetable: one geared for younger children (grades K-2) and one for older children (grades 3-5). In addition, simple activity ideas and recommended book titles for reading aloud are suggested for each fruit and vegetable.

Feel free to pick and choose among these suggestions and adapt as necessary for your particular group or setting. See Standards Connections on pages 40-41 for the specific content standards these activities support.

TASTE-TESTING FRUITS AND VEGETABLES

Taste-testing is a wonderful way to entice children to try freshly grown produce that may be new to them. By sampling and describing an array of fruits or vegetables, children develop their palates, expand their vocabularies, and broaden their repertoire of healthful food options.

TO PREPARE FOR THE TASTE TEST

Obtain two or more varieties of a fruit or vegetable that are ripe and in season in your area. Get enough so that all children can taste each variety.

- Thoroughly wash the produce and display examples of the whole items on a tray. Cut the rest into bite-size pieces and place on a separate tray.
- Have on hand toothpicks for picking up samples, as well as napkins or paper towels. Also, have a waste bucket for collecting scraps to compost. (Note that orange peels may take a while to break down, so you might want to cut them into smaller pieces.)



TO CONDUCT THE TASTE TEST

- Direct children to wash their hands with soap and water.
- Show children the whole fruits or vegetables and invite them to describe the color, texture, and smell of each. Encourage them to use words that tell something—avoiding words such as “gross” or “yucky” that are not descriptive.
- Distribute cut-up food samples, inviting children to try one taste of each variety. Ask them to share words describing the taste of each.

OTHER OPTIONS FOR THE TASTE TESTS

- Conduct taste tests for different preparations of the fruits or vegetables, such as those as suggested in the “Ways to Enjoy ...” and recipe sections in this handbook.

- Use taste tests to get children’s input on what fruits or vegetables, or what recipes, to offer in your program in the future. You may have them vote by placing a green (for “Go”) or red (for “No”) construction paper square in a container to be tallied.

For more details on how to conduct a taste test, see “Savoring California: A Comparative Tasting of California Fruits and Vegetables”, a lesson for Grades 3-5 available at: <https://www.ecoliteracy.org/download/savoring-california-comparative-tasting-california-fruits-and-vegetables>.

SERVING FRESH FRUITS AND VEGETABLES

Adding fresh fruits and vegetables to your program may seem daunting at first, so start small. The suggestions offered are simple and easy to do, with uncomplicated recipes and ideas for enjoying the fresh produce. They require minimal equipment, readily available ingredients, and few preparation steps.

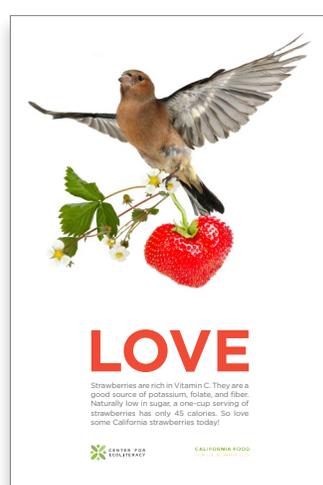
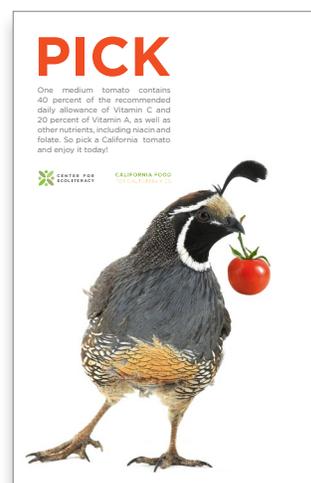
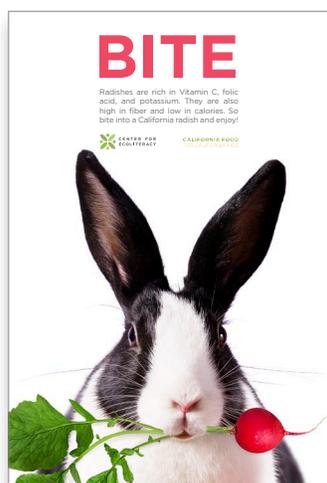
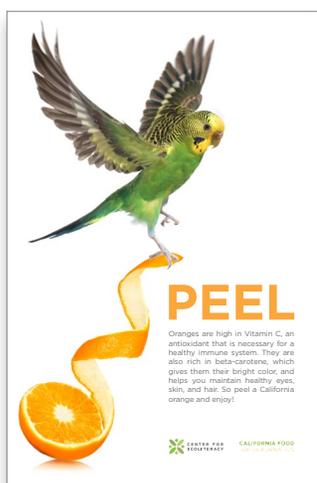
Depending on your setting, you may choose to prepare recipes *with* the children or *for* the children in your program. When preparing the recipes with children:

- Consider letting children choose which recipe to make. There are two recipes plus other ideas for enjoying each fruit and vegetable.
- Organize all the ingredients and equipment you will need.
- Make sure that children wash their hands before handling food or equipment.
- Look for safe, age-appropriate tasks for children to do. Young children can wash vegetables and measure and stir ingredients. Older children may be able to use knives or a blender with close supervision. When in doubt, err on the side of safety.

USING THE POSTERS

Each featured fruit and vegetable includes a full-color poster to help bring them to life. You may print these pages directly from this publication or access them at <https://www.ecoliteracy.org/nourishing-students-posters>. You may use these posters in a variety of ways, as follows.

- Display them to brighten your program site, while also conveying that fruits and vegetables are an appealing food option.
- Hang a poster in the entry or doorway to let participants know the fruit or vegetable focus of the day.
- Share posters to spark a group discussion about the health benefits of fruits and vegetables.
- Inspire an invented group story, starting with the animal and the fruit or vegetable shown and then having each child add a sentence to build the story.
- Provide paper and crayons and invite children to create their own posters about a favorite fruit or vegetable, using the ones provided as examples.





PEEL

Oranges are high in Vitamin C, an antioxidant that is necessary for a healthy immune system. They are also rich in beta-carotene, which gives them their bright color, and helps you maintain healthy eyes, skin, and hair. So peel a California orange and enjoy!



CALIFORNIA FOOD
FOR CALIFORNIA KIDS

PEEL ORANGES

Delicious, juicy oranges make a healthful and refreshing snack that can satisfy even the sweetest sweet tooth. Through these activities, children taste-test oranges and examine what makes them special.

ABOUT ORANGES

- Oranges are round citrus fruits that grow on trees.
- California is the largest producer of oranges in the United States.
- Oranges are a good source of vitamin C (which helps the immune system) and beta-carotene (which is important for skin and eye health).
- An orange has a tough, shiny peel or *rind*. Inside, it is divided into *segments*.
- Each segment is enclosed by a tough *segment wall* that holds together the *juice sacs*.
- The segments and the peel are separated by a white, fibrous *pith*.
- Some orange varieties have *seeds* within the segments.

ACTIVITIES

OBSERVING ORANGES - FOR GRADES K-2

Materials: One orange per child

DIRECTIONS

- 1 Give each child an orange and invite the group to find out what is special about their oranges.
- 2 Help focus their observations, asking: Where do oranges come from? Does your orange have a “button” where it was attached to the orange tree? What is your orange’s shape? Is it perfectly round or does it have flat places or bumps? Does the peel have smooth or rough areas? Any scars? Darker or lighter areas?

- 3 Sit in a circle and have everyone pass their oranges to the person on the right. Have them notice how this orange compares to “theirs.” Have them pass the orange back. Repeat, passing the oranges to the person on the left.
- 4 Invite a few volunteers to share something special about their orange.
- 5 (Optional) Place all the oranges in the middle of the circle, mix the oranges up, and then challenge children to find their orange again.

ORANGE MAGIC - FOR GRADES 3-5

Materials: One orange per child or small group, magnifiers (optional)

DIRECTIONS

- 1 Show children an orange and ask: How many segments or sections do you think are inside this orange? What might be a way to tell without peeling it?
- 2 Give each child or small group an orange. Show how they can pull off the button-shaped piece where the orange was attached to the tree, and underneath they’ll see a ring of tiny white dots. (They may use magnifiers, if available.)
- 3 Direct them to mark one dot with their fingernail or a pen and, starting with that one, to count the dots in the ring. Invite them to peel their orange and count the segments. How do the two numbers compare?
- 4 Ask children for their ideas about what the dots are and what they have to do with the segments inside.
- 5 Explain that when the orange is growing, it is attached to the tree at the “button” known as a *pedicel* (PED-ih-sel) and that each orange segment has a tube or duct (the “dot”) that carries water and materials from the tree to the segment.

OTHER ACTIVITY IDEAS

- Conduct a taste test to compare different varieties of oranges such as navel oranges, Valencia oranges, blood oranges, tangerines, and clementines. (See Taste-Testing Fruits and Vegetables on pages 6–8 for suggestions.)
- Examine other citrus fruits to see whether, like oranges, they have ducts for each fruit segment.
- Dissect oranges to observe and identify their various parts. (See About Oranges on page 15 for the names.)
- Chart the number of segments found in the group’s oranges. Ask children whether they detect a pattern.
- Learn about the woman who pioneered California’s navel orange industry. See “Oranges: A Taste of California Sunshine,” a lesson for Grades 3–5 available at: <https://www.ecoliteracy.org/abundant-california-educational-resources>.

WAYS TO ENJOY FRESH ORANGES

- Eat oranges plain by peeling and separating into segments, or keeping oranges unpeeled, cut in half, and sliced into half-moons.
- Remove the peel and white pith, and slice oranges into circles. Sprinkle with pinches of mild chili powder.
- Wash oranges and cut into unpeeled wedges, place on a rimmed baking sheet, and set in the freezer for an hour or more. Serve frozen.

EASY ORANGE RECIPES

CINNAMON ORANGES

Remove the peel and white pith from 4 oranges. Cut each into slices and arrange on plates. Stir together 2 tablespoons orange juice and 1/4 teaspoon cinnamon. Spoon over the orange slices.

ITALIAN ORANGE SALAD

Peel and slice **6 oranges** and arrange on a platter. Cut **3 thin slices of red onion** into quarters. Cut **12 olives** in half. Scatter the onion and olives over the oranges. Drizzle with **olive oil (optional)** and sprinkle on **black pepper**.

BOOKS ON ORANGES

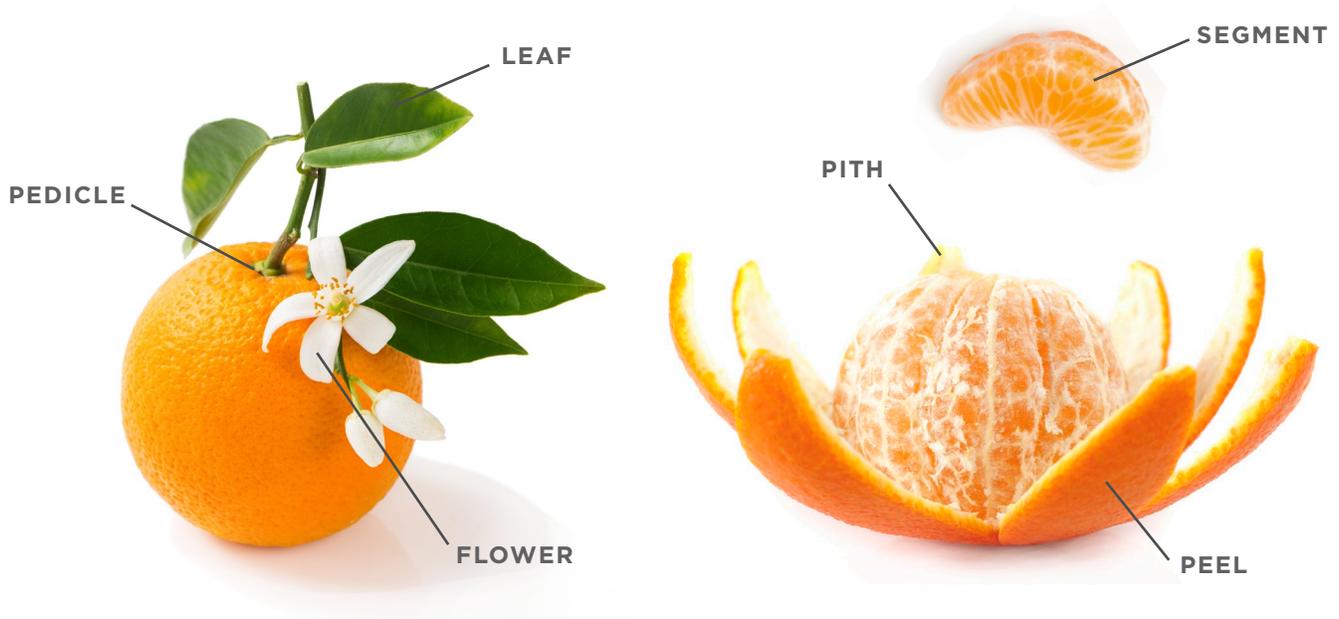
An Orange for Frankie, by Patricia Polacco. This heartwarming story highlights a family's holiday tradition involving oranges. Grades 2-4.

An Orange in January, by Dianna Hutts Aston. Through vivid paintings and simple text, this picture book follows the path of an orange from blossom to fruit to truck to market to a child who shares it with his friends. Grades K-3.

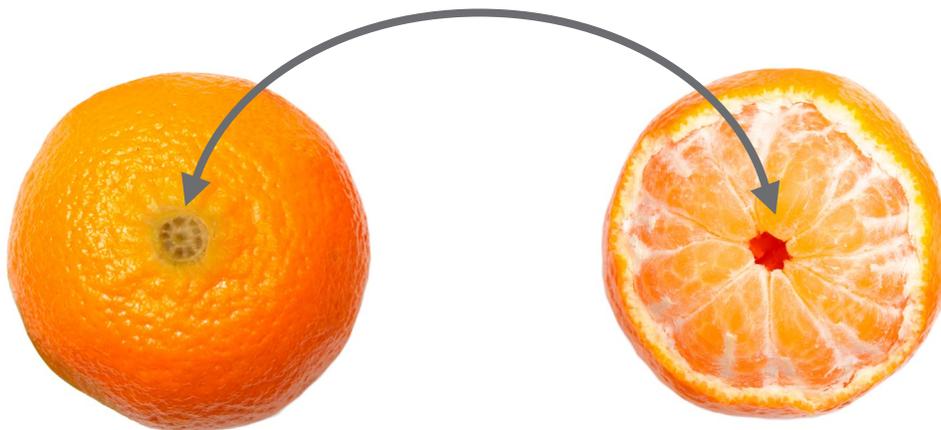
Nothing Rhymes with Orange, by Adam Rex. In this funny parable celebrating difference, one fruit feels left out when all the other fruits sing a song about how wonderful they are, except for Orange, since nothing rhymes with its name. Grades K-3.

ABOUT ORANGES

Oranges are round, juicy fruits that grow on trees. California is the largest producer of oranges in the United States.



The number of dots (or ducts) you see is equal to the number of segments in the orange.

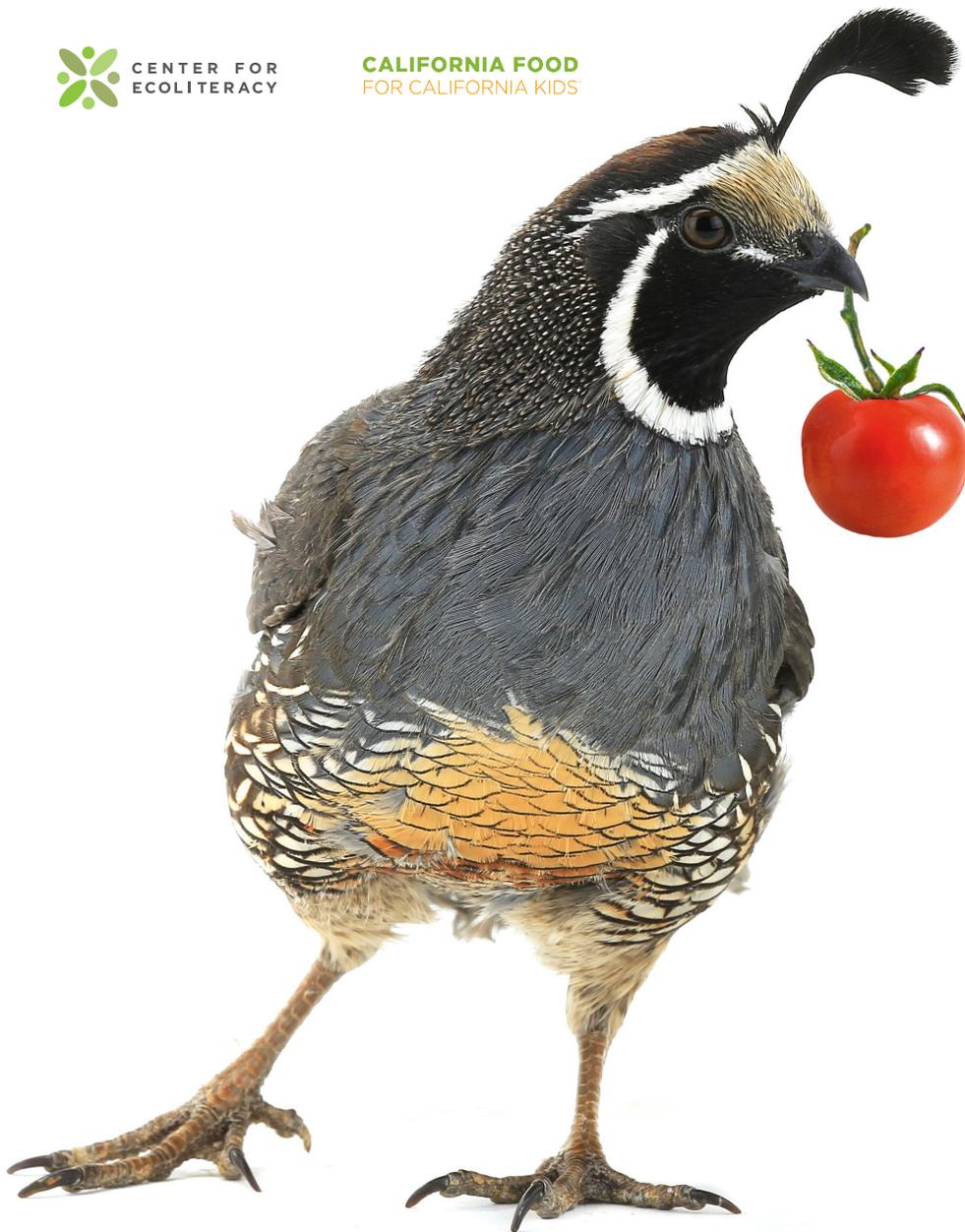


PICK

One medium tomato contains 40 percent of the recommended daily allowance of Vitamin C and 20 percent of Vitamin A, as well as other nutrients, including niacin and folate. So pick a California tomato and enjoy it today!



CALIFORNIA FOOD
FOR CALIFORNIA KIDS



PICK CHERRY TOMATOES

Cherry tomatoes are often sweeter and less acidic than their full-sized cousins, making them a fun, kid-friendly treat. These activities encourage children to try cherry tomatoes and to explore their life cycle.

ABOUT CHERRY TOMATOES

- A cherry tomato is a miniature tomato.
- California is one of the biggest producers of cherry tomatoes in the United States.
- Cherry tomatoes are high in vitamin C (which helps the immune system) and vitamin A (important for growth and for good vision).
- Cherry tomatoes come in a rainbow of colors: red, orange, yellow, green, and purple.
- Cherry tomatoes grow in loose clusters on a vine. Each plant may produce hundreds of tomatoes and each tomato may contain up to 90 seeds.
- Scientifically speaking, cherry tomatoes are fruits, since they start as flowers and contain seeds.
- Cherry tomato plants need lots of sunshine and warmth and grow best in summer.

ACTIVITIES

TOMATO LIFE CYCLE GAME - FOR GRADES K-2

Materials: Cherry tomato, knife, cutting board

DIRECTIONS

- 1 Cut a cherry tomato in half and show children the seeds inside. Ask what would happen if you planted one of the seeds. (The seed would grow into a plant, then the plant would grow flowers, and then the flowers would grow into cherry tomatoes with seeds inside. This is the tomato life cycle.)

- 2 Explain that the group will play a game about the tomato life cycle.
Demonstrate the following hand motions to represent the different phases of the life cycle: Seed—hands and head tucked into a ball, Plant—arms out to the side to represent leaves, Flower—arms above the head, and Tomato—arms making a circle in front.
- 3 Have children practice the hand motions.
- 4 Invite volunteers to call out one of the phases while the others act out that phase and the phase that follows it in the tomato life cycle.
- 5 (Optional) Divide the children into groups of four and challenge them to show the life cycle phases all at once, in order, with each child taking a phase.

CHERRY TOMATO SURVIVOR - FOR GRADES 3-5

Materials: Cherry tomato, cutting board, knife, 3x5 index cards (one per child); large space and four carpet squares or other base markers

DIRECTIONS

- 1 Slice open the cherry tomato and have children estimate the number of seeds it holds. Explain that they will play a game about the life of a cherry tomato seed. You may want to discuss the parts of a cherry tomato plant (see About Cherry Tomatoes on page 21).
- 2 Write “Cherry Tomato Seed” on an index card and ask children to name things that help cherry tomato seeds grow (sunlight, air, water, soil, compost, space, warmth, and so on). Write their ideas on separate index cards, repeating if needed to fill two-thirds of the cards. Ask the group to name things that keep seeds from growing (drought, cold, weeds, disease, animals eating seeds, and so on) and write those ideas on the remaining cards.
- 3 Mix up the cards and deal them out, telling children to keep secret what’s on their card. On the signal “Go,” children run around the bases in a circle. On “Stop,” they run to the nearest base.
- 4 Ask the “Cherry Tomato Seed” to reveal where it landed and direct the others on that base to show their cards. Have the group determine if the seed could

survive in this spot. Check the other bases to see if the seed could survive elsewhere.

- 5 Redistribute the cards and play the game a few more times, tallying when the seed survives. End by asking children why they think cherry tomatoes have so many seeds. (Lots of seeds means a better chance some will survive.)

OTHER ACTIVITY IDEAS

- Conduct a taste test to compare fresh cherry tomatoes, other fresh tomatoes, sun-dried tomatoes, and canned or cooked tomatoes. (See Taste-Testing Fruits and Vegetables on pages 6-8 for suggestions.)
- Give each child half of a cherry tomato and invite them to predict how many seeds are inside. Have them count the seeds, comparing their results with others'.
- Visit a nearby garden to see cherry tomatoes growing and to pick them fresh from the vine.
- Plant cherry tomato plants in containers and tend them as they grow.
- Hold a salsa-making contest featuring cherry tomatoes. See “The Tomato Salsa Challenge,” a lesson for Grades 3-5 available at:
<https://www.ecoliteracy.org/abundant-california-educational-resources>.

WAYS TO ENJOY FRESH CHERRY TOMATOES

- Pull off green stems from the cherry tomatoes and eat the tomatoes whole.
- Cut cherry tomatoes in half, sprinkle with dried oregano or other herb, and pick up with toothpicks.
- Use toothpicks to dip whole cherry tomatoes into salad dressing or hummus.

EASY CHERRY TOMATO RECIPES

CHERRY TOMATO POPS

Wash a **pint of cherry tomatoes** and a **handful of fresh basil leaves**. Prepare **1 cup mozzarella or other cheese cubes**. Invite children to spear tomatoes, basil, and cheese onto toothpicks or bamboo skewers, in any order they like. Drizzle with **olive oil (optional)**, if desired.

CHERRY TOMATO AND FRESH MINT SALAD

Wash and cut in half **3 cups cherry tomatoes**. Wash and roughly chop a **handful of mint**. In a medium-size bowl, mix together the cherry tomatoes, the mint, a **splash of olive oil (or other oil)**, and a **splash of vinegar**.

BOOKS ON CHERRY TOMATOES

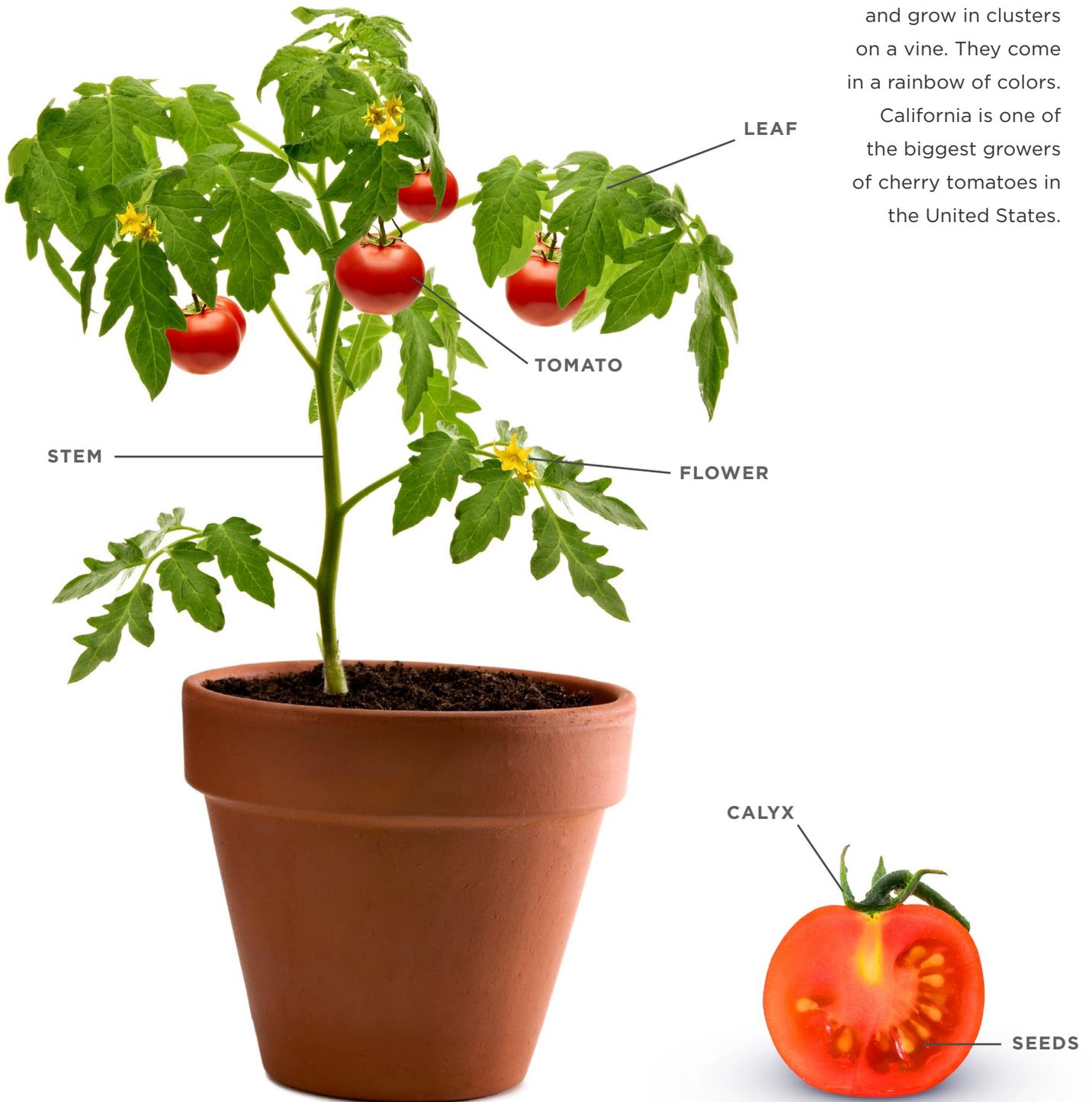
Ashlyn Grows... Cherry Tomatoes, by Gene Powell. In this delicious story, a young girl grows a cherry tomato plant with the help of her grandfather, learning about the plant's life cycle, as well as about patience and responsibility. Grades K-3.

I Will Never Not Ever Eat a Tomato, by Lauren Child. A fussy eater learns to try a variety of strange foods—including tomatoes—through her brother's imaginative names for them. Grades K-3.

Laughing Tomatoes and Other Spring Poems/Jitomates Risuenos y Otros Poemas de Primavera, by Francisco X. Alarcón. This bilingual book of poetry celebrates the sun, dew, tomatoes, and chili peppers, while honoring life, nature, and culture. Grades 1-4.

ABOUT CHERRY TOMATOES

Cherry tomatoes are miniature tomatoes and grow in clusters on a vine. They come in a rainbow of colors. California is one of the biggest growers of cherry tomatoes in the United States.





LOVE

Strawberries are rich in Vitamin C. They are a good source of potassium, folate, and fiber. Naturally low in sugar, a one-cup serving of strawberries has only 45 calories. So love some California strawberries today!

LOVE STRAWBERRIES

Sweet strawberries are loved by kids and adults alike. This tasty, heart-shaped fruit was a symbol for Venus, the Roman goddess of love. In these activities, children taste strawberries several different ways and assess the group's fondness for them.

ABOUT STRAWBERRIES

- Strawberries are sweet, red fruits with seeds on the outside.
- California grows 80 percent of the strawberries eaten in the United States.
- Strawberries are good sources of vitamin C (which helps the immune system), potassium, folate, and fiber.
- Strawberries are members of the rose family. Their cousins include apples, cherries, and peaches.
- Most strawberry plants don't grow from seeds, but from runners. These stem-like shoots grow from the "mother" plant to make new "daughter" plants.
- Strawberries grow best with sunny days and cool nighttime temperatures.

ACTIVITIES

FAVORITES GRAPHS - FOR GRADES K-2

Materials: paper, marker pen, chalk or masking tape

DIRECTIONS

- 1 Invite children to name their favorite fruits. Create labels for three or four fruits by writing the names on separate sheets of paper. If no one mentions them, ask whether anyone likes strawberries and make a label for strawberries.
- 2 Use chalk or masking tape to make a baseline on the floor. Place the fruit labels equally spaced along the baseline.

- 3 Have students stand in front of their favorite fruit, one behind the other to form a line. Ask, “What is the most popular fruit among our group? How do we know? Which line is the longest? Which is the shortest?”
- 4 Ask children to name their favorite way to eat strawberries (such as plain, with yogurt, or in strawberry shortcake). Create new labels for them.
- 5 Have students stand in line again in front of the label that matches their response. Ask, “Which is the most popular way to eat strawberries among our group? How do we know?”

STRAWBERRY STRAW POLLS - FOR GRADES 3-5

Materials: drinking straws cut in half or other tokens, 4-6 clear plastic cups or other containers, dry erase marker, cloth (for clearing pen marks)

DIRECTIONS

- 1 Ask children what the word “poll” means. If they don’t know, explain that it is asking people questions to find out the general opinions of a group. Say that the children will be creating a poll to find out what the group thinks about strawberries.
- 2 Label two cups as follows with the marker: “Like strawberries” and “Do not like strawberries.” Give each child a straw or other token and have them put it in the cup matching their opinion.
- 3 Count the straws in each cup and challenge children to make statements based on their findings, such as, “Two more people in our group like strawberries than don’t.”
- 4 Invite volunteers to suggest more questions—and possible responses—to poll the group about strawberries or fruit. For example, for “Which is your favorite red fruit?” the cups might be labeled with different red fruits. Or, for “How much do you like strawberries?” the labels might read: Love, Like, Just OK, Don’t Like, and Hate.
- 5 For each suggestion, put new labels on the cups and have children do the poll and make statements about the findings.

OTHER ACTIVITY IDEAS

- Conduct a taste test comparing fresh and frozen strawberries. Which has more flavor? Which has a more pleasing texture? (See Taste-Testing Fruits and Vegetables on pages 6–8 for suggestions.)
- Create cards by cutting out strawberry-shaped pieces of heavy paper and then using pencil erasers dipped in red tempera paint or a red ink pad to stamp “seeds” all over them. Add leaves cut from green construction paper.
- Grow strawberry plants in pots filled with potting soil. Place in a sunny location and water to keep the soil moist. Pinch back runners so that the plant’s energy goes into the fruit. (See About Strawberries on page 27.)
- Invite children to invent a way to protect strawberries in transit. See “Strawberry No-Crush Challenge,” a lesson for Grades 3–5 available at: <https://www.ecoliteracy.org/abundant-california-educational-resources>.

WAYS TO ENJOY FRESH STRAWBERRIES

- Rinse strawberries under running water. Take off the green stem with a paring knife or strawberry huller. Eat whole.
- Pull off leaves of a strawberry with pinched fingers. Put the strawberry into the mouth, fat end first, and eat in one bite. (This puts the sweetest part, the pointed end, on the tip of the tongue. Compare the taste to eating a strawberry the other way.)
- Slice strawberries and top with plain, low-fat yogurt or chopped almonds or walnuts.

EASY STRAWBERRY RECIPES

STRAWBERRY SUSHI

Chop a **handful of strawberries**. Spread **low-fat cream cheese** on a **whole wheat tortilla** and sprinkle with the chopped strawberries and **whole spinach leaves**. Roll the tortilla tightly and slice into rounds.

STRAWBERRY LASSI

In a blender, combine **1 pint strawberries, 2 cups plain low-fat yogurt,** and **1 cup ice.** Blend until smooth.

BOOKS ON STRAWBERRIES

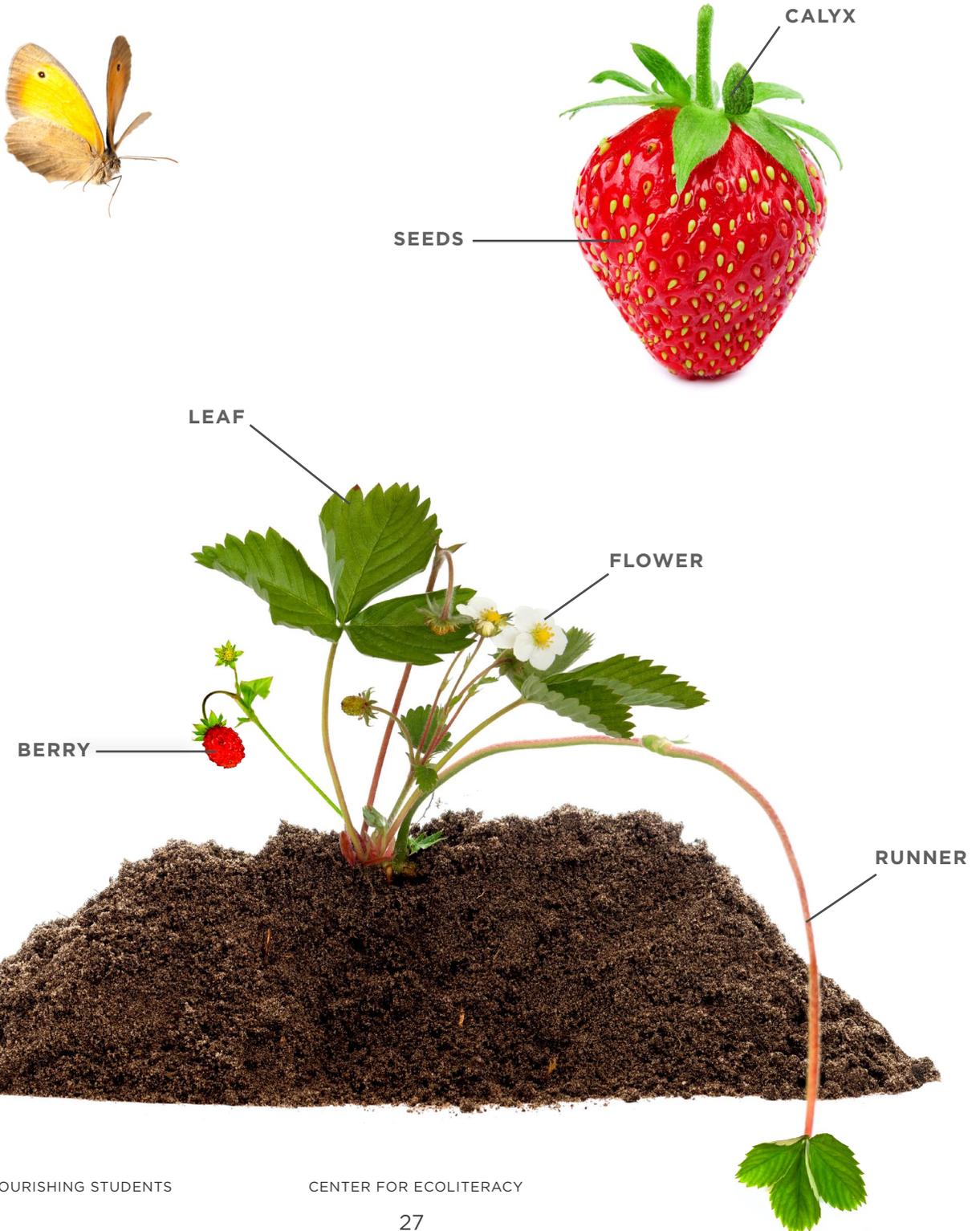
From Seed to Strawberry, by Mari Schuh. Each step of the strawberry's life cycle—from tiny seed to sweet berry—is described with words and beautiful photographs. Grades K-3.

The First Strawberries: A Cherokee Story, retold by Joseph Bruchac. This origin story based on a Cherokee legend explains how strawberries first came to be. Grades K-2.

The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear, by Don Wood. In this delightful picture book, a mouse does everything he can to save his freshly picked strawberry from a hungry bear. Grades K-1.

ABOUT STRAWBERRIES

Strawberries are sweet, red fruits with seeds on the outside. But most strawberry plants grow from stem-like shoots called runners, not from seeds. California grows more strawberries than any other state in the United States.



BITE

Radishes are rich in Vitamin C, folic acid, and potassium. They are also high in fiber and low in calories. So bite into a California radish and enjoy!



CALIFORNIA FOOD
FOR CALIFORNIA KIDS



BITE RADISHES

Radishes have a peppery bite that many children enjoy, but may not appeal to others. For best success, pair radishes with kid-friendly flavors. The following activities entice children to explore radish plants, and to try radishes in a variety of ways.

ABOUT RADISHES

- A radish is a root vegetable whose flavor has a sharp bite.
- California is one of the leading radish producers in the United States.
- Radishes are high in vitamin C (which helps the immune system), folic acid, and potassium.
- There are hundreds of varieties of radishes, which are popular all over the world.
- The radish we eat is the swollen root of the plant. The leaves are also edible.
- Their peppery flavor comes from sulfur compounds called *isothiocyanates* (eye-so-thigh-oh-SIGH-uh-nates), which protect the plant from being eaten by animals.
- Radishes are mildest when grown in cool weather.

ACTIVITIES

RADISH PLANT SONG - FOR GRADES K-2

Materials: Whole radish (with leaves, if possible)

DIRECTIONS

- 1 Show children the radish and ask if they can name the different parts of the radish plant (leaf, stem, and root). Point out that the radish bulb we eat is a swollen part of the root.

- 2 Ask what other plant parts they know. Explain that radish plants also have flowers, although they can't see them now. (See About Radishes on page 33.)
- 3 Teach children a variation of the song, "Head, Shoulders, Knees, and Toes", with the following words:

Leaves, flowers, stem, and roots, stem and roots
Leaves, flowers, stem and roots, stem and roots
Plants like these grow vegetables and fruits
Leaves, flowers, stem and roots, stem and roots
- 4 As they sing, direct children to tap parts of their body (head, shoulders, knees, and toes) to represent the plant parts.
- 5 Repeat the song and, with each verse, omit one of the plant parts and have children just tap the corresponding body part.

RADISH DISSECTION - FOR GRADES 3-5

Materials: Radishes (with leaves, if possible) cut lengthwise in half, paper and pencil, magnifier (optional)

DIRECTIONS

- 1 Ask children what they think roots do for plants. (They anchor the plant in soil, store food, and take in water and nutrients.)
- 2 Invite children to look closely at the outside of a radish to see the different parts that help the plant. They may use magnifiers, if available.
- 3 Point out the tap root (the large main root that grows straight down and anchors the plant), the swollen part of the tap root (the bulb that stores food), and the root hairs (smaller roots that take in water and nutrients). Point out the leaves, which make food for the plant. (See About Radishes on page 33.)
- 4 Encourage children to look at the inside of the radish to see how the arrangement of the cells helps to bring water and nutrients to the entire radish.

- 5 (Optional) Have children fold a piece of paper in half and draw the inside of the radish on one half and the outside on the other. Show them how to rub the radish root on the paper to shade in the red parts and to rub a leaf to shade in the green parts.

OTHER ACTIVITY IDEAS

- Conduct a taste test to examine different varieties of radishes such as cherry bell, watermelon, or French breakfast radishes. (See Taste-Testing Fruits and Vegetables on pages 6-8 for suggestions.)
- Compare the structure of radishes to other root vegetables such as carrots, beets, turnips, and onions.
- Point out that both words in “red radish” start with the same letter. For each letter of the alphabet, invite children to name a fruit or vegetable and a word that could describe it that starts with the same letter. Encourage children to be imaginative or silly.
- Raise radishes, which grow relatively quickly and easily from seed to radish in about four weeks. See “Raising Radishes,” a lesson for Grades 3-5 available at: <https://www.ecoliteracy.org/abundant-california-educational-resources>.

WAYS TO ENJOY FRESH RADISHES

- Rinse radishes, cut in quarters, and pick up with toothpicks.
- Slice radishes thinly and layer on buttered crackers or bread slices.
- Enjoy with an array of dipping options, like hummus, ranch dressing, nut butter thinned with water or coconut milk, or olive oil seasoned with salt.

EASY RADISH RECIPES

PINK RADISH SPREAD

In a blender or food processor, blend until smooth a **half pound of trimmed red radishes**, **3 green onions (optional)**, and **8 ounces of low-fat cream cheese**.

Spread onto **slices of whole wheat or rye bread**.

RADISH SALSA

Cut **1 bunch red radishes** into thin slices. Mince **4 green onions** and **2 tablespoons fresh parsley**. Toss in a bowl with **1 tablespoon fresh lemon juice** and **1/8 teaspoon salt (optional)**. Allow to sit for 20 minutes before serving with **pita crisps or fresh vegetables**.

BOOKS ON RADISHES

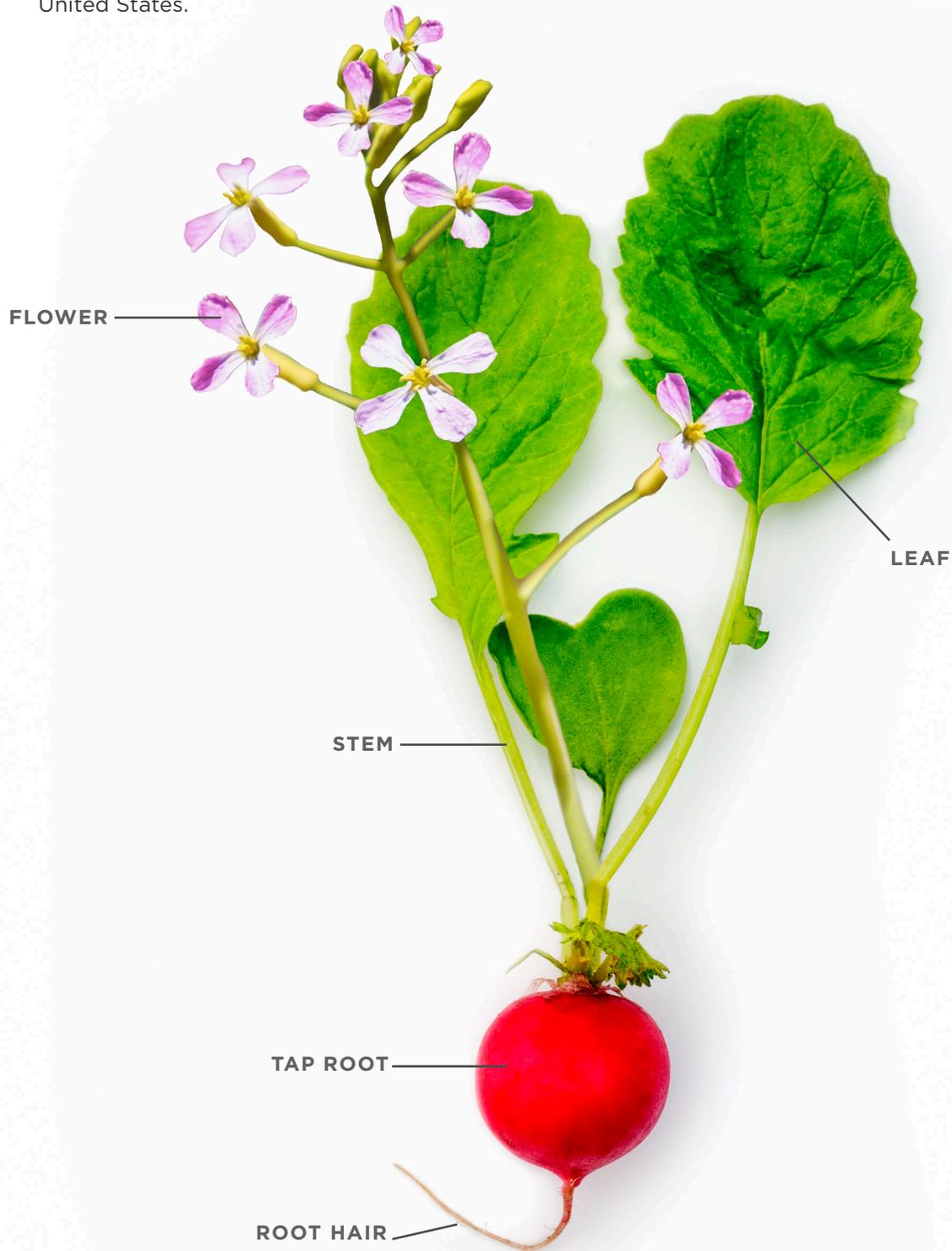
Rah, Rah, Radishes!: A Vegetable Chant, by April Pulley Sayre. With rhyming couplets and farmers market photos, this book celebrates radishes and other vegetables. Grade K-1.

Rosita and the Night of the Radishes, by Dorothy Thurgood Manning. In this magical story, Rosita enters the radish-carving contest held every year in Oaxaca, Mexico, with surprising results. Grades 1-4.

Talia and the Rude Vegetables, by Linda Elovitz Marshall. Talia mis-hears when her grandmother asks her to get root vegetables for a Rosh Hashanah stew and picks the orneriest ones she can find. (Note: The story doesn't specifically mention radishes, but does introduce root vegetables.) Grades K-3.

ABOUT RADISHES

A radish is a vegetable with a peppery flavor, popular all over the world. The part we eat is the swollen tap root of the plant. California is one of the biggest growers of radishes in the United States.



GRAB

Grapes are a good source of vitamins C, K, and antioxidants. So grab some California grapes and enjoy!



CALIFORNIA FOOD
FOR CALIFORNIA KIDS



GRAB GRAPES

Grapes are a nutritious finger food with a sweet taste that kids love. Through these enrichment activities, children explore how grapes grow and how they get to us, and sample new ways to enjoy grapes.

ABOUT GRAPES

- Grapes are smooth-skinned juicy berries that may be eaten fresh or dried.
- California produces 99 percent of the fresh-eating or “table” grapes grown in the United States.
- Grapes are good sources of vitamins C and K, which are important for growth and development.
- Table grapes come in many colors, including red, green, purple, pink, and gold.
- Grapes grow in clusters or bunches on vines that can reach up to 115 feet long and live 50 to 100 years.
- “Seedless” grape varieties do have seeds, but don’t have a hard coat like other seeds.
- Grapes grow best in climates that are hot and dry.

ACTIVITIES

GRAPE BUNCH GAME - FOR GRADES K-2

Materials: Bunch of grapes

DIRECTIONS

- 1 Show children the bunch of grapes and ask how grapes grow. If necessary, explain that they grow in bunches on long stems called vines. Point out how the grapes are connected to the bunch by their stems. (See About Grapes on page 39.)

- 2 Explain that children will play a game acting out bunches of grapes. Have two volunteers link elbows (their “stems”) to become a “grape bunch” on a vine. The rest of the children are “loose grapes.”
- 3 When tagged by the bunch, a loose grape becomes part of the bunch, linking with the others by their stem.
- 4 To make it easier to tag loose grapes, divide a bunch into two when it has four children.
- 5 Continue playing until everyone is part of a bunch.

GRAVEL TO GRAPES - FOR GRADES 3-5

Materials: box with lid, objects to represent steps of grape production (small sealable plastic bags of gravel or small rocks, soil, and grapes and an umbrella, trowel, toy truck, and lunch bag or box)

DIRECTIONS

- 1 Pose this riddle: How do we get grapes from gravel? Explain that you have a box of clues to help answer the riddle.
- 2 Have one child at a time reach inside the box of objects, without looking, and pull out a clue. For each clue ask, “How might this clue relate to the riddle?”
- 3 As children begin to make the connections, have one child at a time move an object to begin lining up the steps of how gravel becomes grapes.
- 4 Eventually the lineup should connect more or less as follows.
 - **Gravel:** Gravel is a building block of soil.
 - **Umbrella:** Rain and weather wear down the gravel into smaller pieces.
 - **Soil:** The small pieces mix with dried leaves and other matter to become soil.
 - **Trowel:** Farmers plant young grape vines in the soil.
 - **Grapes:** The vines grow grapes.
 - **Truck:** The grapes are harvested and transported to a store.
 - **Lunch bag:** A family buys them and eats them in their lunch.

- 5 Invite members of the group to tell the story and answer the riddle. Note that your group may create a slightly different story from the clues.

OTHER ACTIVITY IDEAS

- Conduct a taste test to compare the tastes and textures of different varieties or colors of grapes and of raisins, or dried grapes. (See Taste-Testing Fruits and Vegetables on pages 6–8 for suggestions.)
- Create grape prints by having children dip their thumb into purple washable paint and then pressing onto cardstock in the shape of a bunch of grapes. They may also use a paintbrush and green paint to draw leaves and a vine.
- Learn the grapevine dance step: Starting with feet together, step the right foot to the right. Then, step the left foot behind and past the right foot. Step the right foot to the right again, and then the left foot in front of and past the right foot. Keep repeating until you run out of space. Try going in the opposite direction, starting with the left foot.
- Celebrate the grape harvest and find out about the role of farmworkers in bringing us grapes. See “Grapes: Celebrating the Harvest,” a lesson for Grades 3–5 available at:
<https://www.ecoliteracy.org/abundant-california-educational-resources>.

WAYS TO ENJOY FRESH GRAPES

- Rinse grapes and then snip the bunch into small, single-serving clusters with kitchen shears.
- Remove grapes from stems, cut them in half, and serve with cubed cheese and whole wheat crackers.
- Serve grapes with toothpicks and fruit-flavored yogurt for dipping.

EASY GRAPE RECIPES

GRAPESICLES

Wash a **bunch of grapes** removed from their stems, place a toothpick in each grape, and place onto a rimmed baking sheet lined with wax paper. Freeze for

one hour. Dip the semi-frozen grapes into **plain, low-fat yogurt**, sprinkle with **coconut flakes or chopped nuts**, and serve.

GRAPE TRAIL MIX

In a resealable gallon bag, mix: **1 cup seedless grapes, 4 ounces diced cheddar or jack cheese, 1/2 cup chocolate chips (optional), and 1/2 cup chopped nuts or sunflower seeds**. Shake to combine. Keep chilled until ready to serve.

BOOKS ON GRAPES

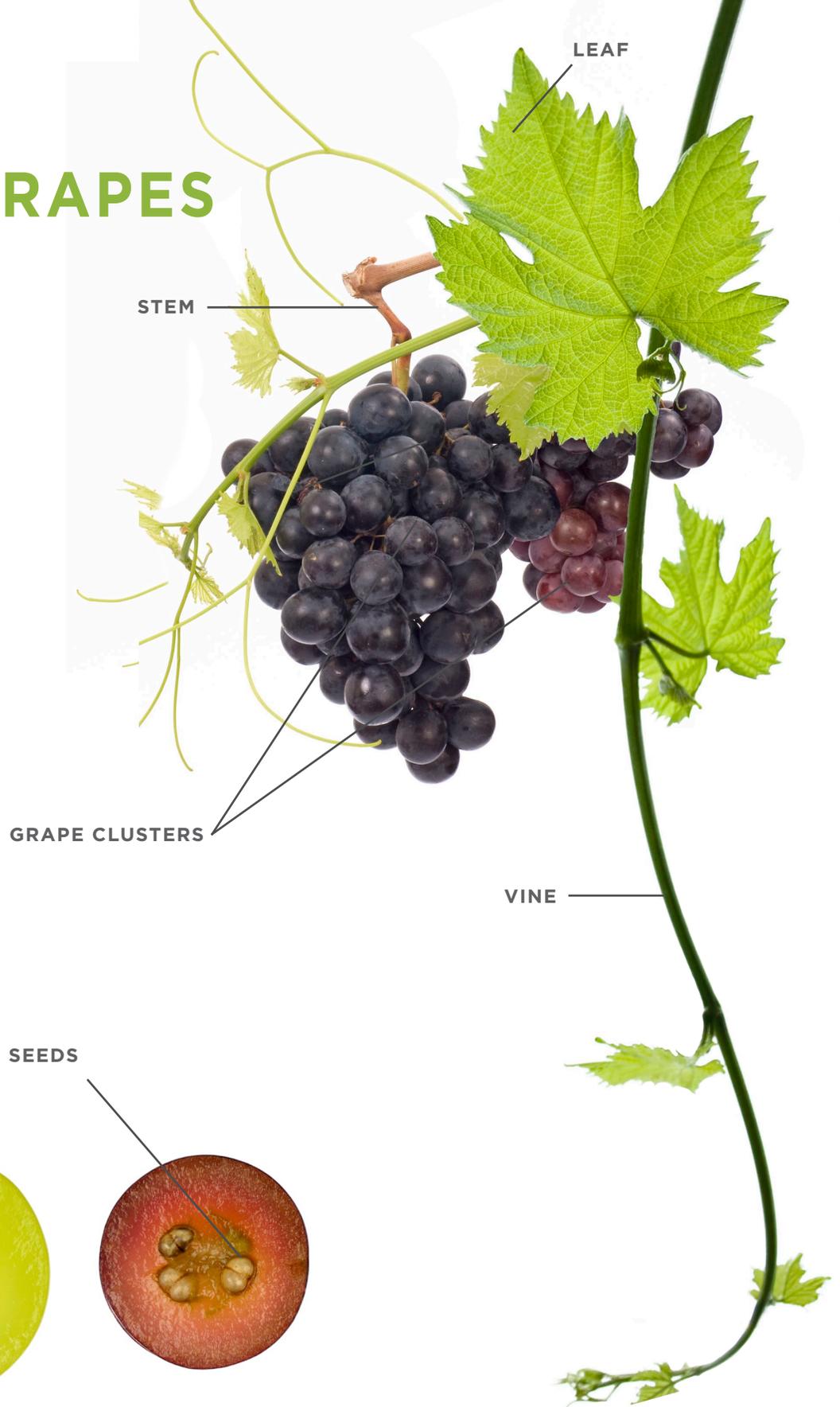
First Day in Grapes, by L. King Perez. Grades 2–5. This insightful story centers on Chico, who moves a lot with his migrant family and now faces his first day in third grade during the grape harvest. Grades 2–5.

The Grapes Grow Sweet: A Child's First Family Grape Harvest, by Lynne Tuft. Four-year-old Julian helps with the grape harvest on his family's vineyard and, through his eyes, readers follow the development of grapes from bloom to harvest. Grades 2–3.

Lousy Rotten Stinkin' Grapes, by Margie Palatini. In this humorous new take on the familiar "sour grapes" story, Fox schemes how to grab ripened grapes that are just out of his reach. Grades K–3.

ABOUT GRAPES

Grapes are smooth-skinned, juicy berries that are eaten fresh or dried. They come in red, green, purple, pink, or gold. California grows almost all of the fresh grapes people in the United States eat.



Grade	Standards Connections	Enrichment Activities				
		Peel Oranges	Pick Tomatoes	Love Straw-berries	Bite Radishes	Grab Grapes
California Health Education Content Standards						
K	7.1.N. Select nutritious snacks.	•	•	•	•	•
2	8.1.N. Practice making healthy eating choices with friends and family.	•	•	•	•	•
4	8.1.N. Support others in making positive food and physical activity choices.	•	•	•	•	•
5	7.2.N. Demonstrate how to prepare a healthy meal or snack using sanitary food preparation and storage practices.	•	•	•	•	•
California Next Generation Science Standards						
K	Performance Expectation K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.	•		•		
1	Disciplinary Core Idea LS1.C. All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.		•		•	•
2	Disciplinary Core Idea LS2.A. Plants depend on water and light to grow.		•	•	•	
K-2	Science and Engineering Practice 3. Make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons.	•			•	
K-2	Science and Engineering Practice 4. Record information (observations, thoughts, ideas).			•		
3	Performance Expectation 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.		•			
4	Performance Expectation 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.				•	
5	Performance Expectation 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.					•
3-5	Science and Engineering Practice 3. Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or to test a design solution.	•			•	

Grade	Standards Connections	Enrichment Activities				
		Peel Oranges	Pick Tomatoes	Love Straw-berries	Bite Radishes	Grab Grapes
California Next Generation Science Standards						
K-2	Science and Engineering Practice 4. Represent data in table and/or various graphical displays (bar graphs, pictographs, and/or pie charts) to reveal patterns that indicate relationships.			•		
Common Core State Standards – Mathematics						
1	1.MD.C.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.			•		
2	2.MD.D.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.			•		
Common Core State Standards – English Language Arts						
K	SL.K.2. Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.	•	•	•	•	•
1	SL.1.2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.	•	•	•	•	•
2	Performance Expectation 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.				•	
2	Performance Expectation 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	•	•	•	•	•
3	Performance Expectation 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	•	•	•	•	•
4	SL.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	•	•	•	•	•
5	SL.5.2. Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	•	•	•	•	•



ABOUT THE CENTER FOR ECOLITERACY

The Center for Ecoliteracy is an internationally recognized leader in systems change innovations in education for sustainable living. Since 1995, the Center has engaged with thousands of educators from across the United States and six continents. The Center offers publications, seminars, academic program audits, coaching for teaching and learning, in-depth curriculum development, keynote presentations, and technical assistance. Books authored or coauthored by the Center for Ecoliteracy include *Ecoliterate: How Educators Are Cultivating Emotional, Social, and Ecological Intelligence* (Jossey-Bass, 2012); *Smart by Nature: Schooling for Sustainability* (Watershed Media, 2009); and *Ecological Literacy: Educating Our Children for a Sustainable World* (Sierra Club Books, 2005).

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