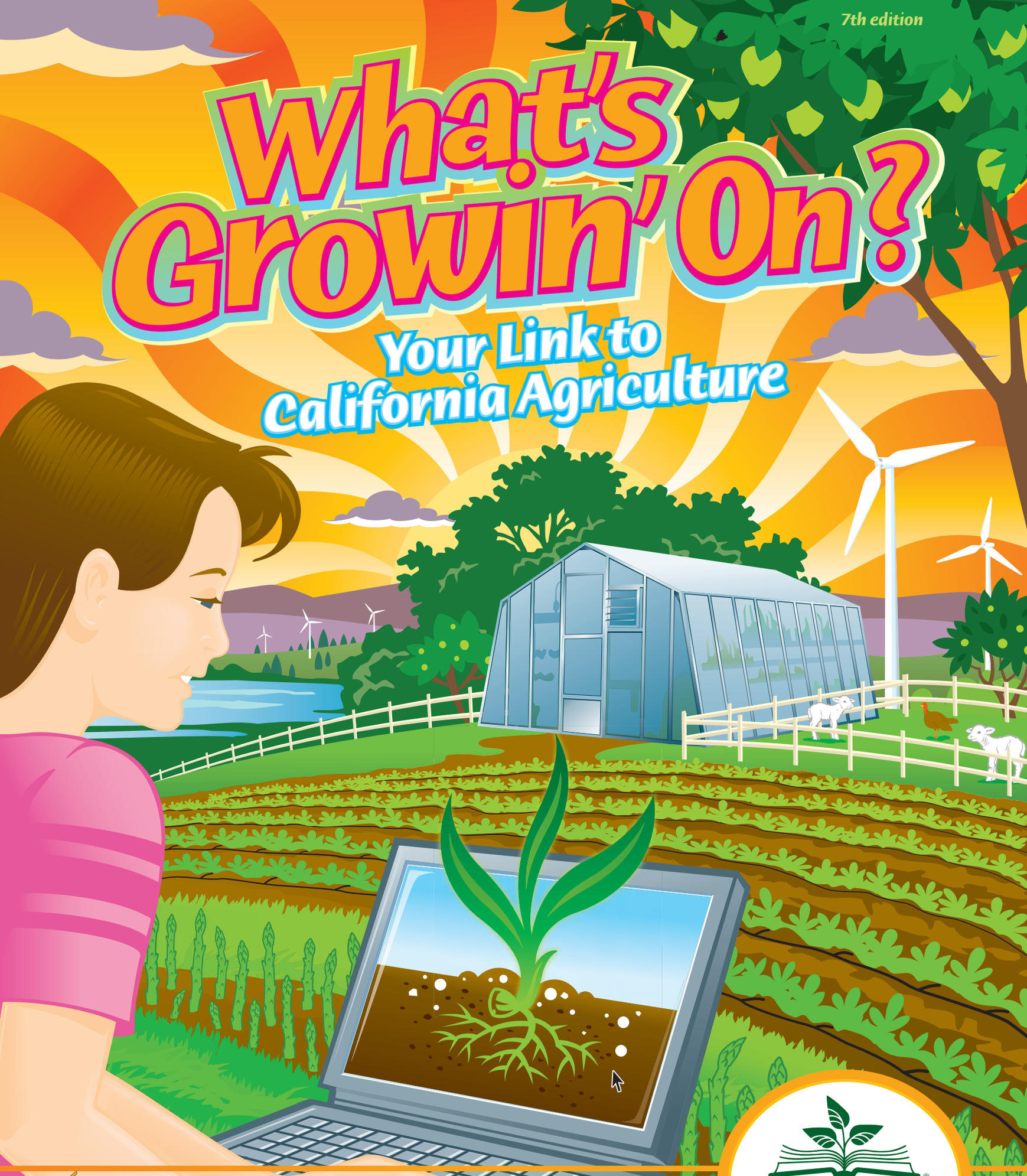
7th edition

What's Growin' On?

Your Link to California Agriculture



A NEWSPAPERS IN EDUCATION SUPPLEMENT

For an accompanying Teacher's Supplement, visit www.cfaitc.org/wgo or call (800) 700-AITC.

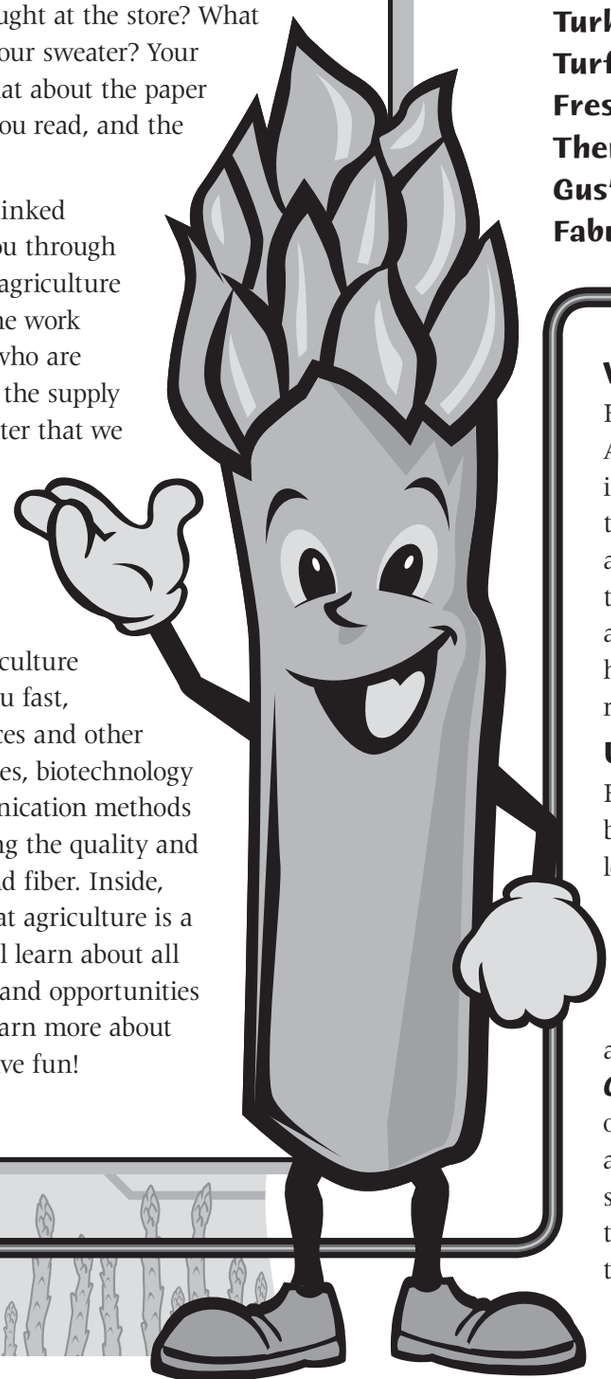
California Foundation for Agriculture in the Classroom

Are You Connected?

Hey kids! I'm Gus, and yes, you guessed it, I'm a stalk of asparagus! You'll see me often as you work and play your way through this awesome agricultural adventure, so keep an eye out for me! Have you ever stopped to think about where your lunch comes from? Not the cafeteria or your refrigerator at home, but where it ***really*** comes from? Your apples and grapes? Your chicken nuggets and string cheese? Have you ever wondered where the clothes that you are wearing came from before they were bought at the store? What is your t-shirt made of? Your sweater? Your favorite pair of jeans? What about the paper you write on, the books you read, and the room you're sitting in?

All of these things are linked together, and linked to you through the amazing and diverse agriculture industry. Agriculture is the work of farmers and ranchers who are responsible for producing the supply of food, clothing and shelter that we need daily.

But it's much more than that! Agriculture is using some of the most progressive technology around to make sure agriculture products are getting to you fast, fresh, and safe! GPS devices and other computers, digital advances, biotechnology and cutting-edge communication methods all play a role in improving the quality and production of our food and fiber. Inside, you'll see tons of ways that agriculture is a part of your life and you'll learn about all of the amazing advances and opportunities that will inspire you to learn more about California agriculture. Have fun!



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Teachers

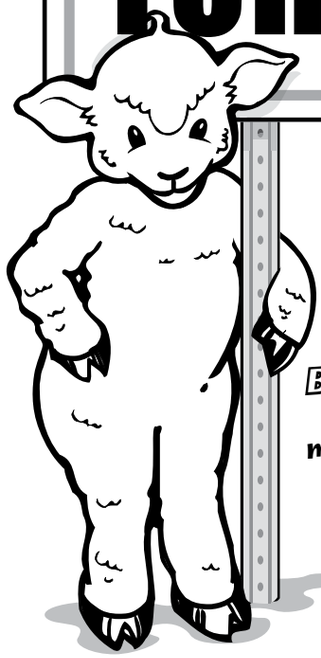
What is *What's Growin' On?*

For seven consecutive years, California Foundation for Agriculture in the Classroom has produced a 16-page, interactive student newspaper aimed at educating third through eighth grade students about the importance of agriculture. In this edition, we point out some ways that technology has helped improve the efficiency of farmers and ranchers, as well as numerous links that consumers have with agriculture on a daily basis, often without even realizing it!

Using *What's Growin' On?* in Your Classroom

Each edition of ***What's Growin' On?*** is developed by California educators and reviewed for accuracy by leading agriculture industry experts to provide relevant information about each subject while demonstrating agriculture's impact on each of us. Activities and lessons on the following pages are designed to meet CA Board of Education Content Standards. The fun, vibrant and educational information contained within ***What's Growin' On?*** will link you and your students to the world of farmers, ranchers and growers, and help you learn more about their practices through engaging activities. Your students will recognize that agriculture truly is a part of their lives in more ways than they ever imagined!

EWE TURN



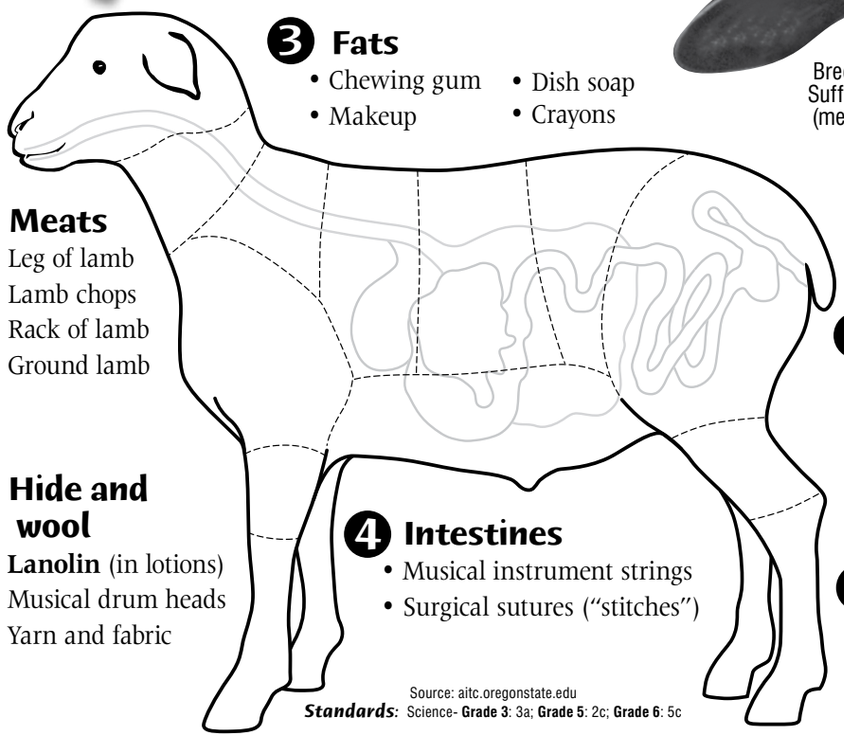
Ewe **is the term for a female sheep.**

Buck **is the term for a male sheep.**

A *lamb* is a sheep under one year old.

Ways We Use Sheep

Breed: Suffolk (meat)



1 Meats
- Leg of lamb
- Lamb chops
- Rack of lamb
- Ground lamb

2 Hide and wool
- **Lanolin** (in lotions)
- Musical drum heads
- Yarn and fabric

3 Fats
- Chewing gum
- Makeup
- Dish soap
- Crayons

4 Intestines
- Musical instrument strings
- Surgical sutures ("stitches")

5 Bones, horns and hooves
- Marshmallows
- Combs and toothbrushes

6 Manure
- **Nitrogen fertilizer**

Source: aitc.oregonstate.edu

Standards: Science- **Grade 3**: 3a; **Grade 5**: 2c; **Grade 6**: 5c

Breed: Rambouillet (wool)

Sheep Nutrition

Sheep nutrition is important because it influences the quality of sheep products we enjoy on a daily basis. Similar to humans, sheep need a carefully balanced diet to keep them healthy and productive.

A sheep farmer feeds 3 pounds of grain to each sheep each day. The feed contains 8% **crude protein**, 3.5% **crude fat**, and 13% **crude fiber**. Represent these numbers in percent, decimal and fraction form.

	Percent	Decimal	Fraction
Crude Protein			
Crude Fat			
Crude Fiber			

Standards: Math- **Grade 4:** Statistics, Analysis and Probability (SAP) 1.0; **Grade 5:** NS 1.2; SAP 1.0; **Grade 6**: NS 1.2; SAP 2.0

More than 100 years ago, Basque immigrants from the Pyrenees Mountains of Spain and France came to the Western United States to herd sheep. Since then generations of sheepherders have been managing flocks of sheep through the Tehachapi Mountains and the Mojave Desert outside Bakersfield, California. Basque sheepherders today use modern technology, such as cell phones and computers, but often travel alone with their flock throughout the summer months. Why do you think it is important for sheepherders to move their sheep and why do they keep them together in a flock?

Standards: History/Social Science- **Grade 3**: 3.5; Grade 4: 4.4; **Grade 5**: 5.2
Source: California Country Magazine "Basquing in Tradition"

Newspaper Activity

Look through your local newspaper ads and find five products that come from sheep. Add up the costs. What would the total cost be if all sheep products were 12% off the original price?

Standards: Math- **Grade 3**: Number Sense (NS) 3.0; **Grade 4**: NS 1.0, 2.0; **Grade 5**: NS 1.0, 2.0; **Grade 6**: NS 1.0, 2.0; **Grade 7**: NS 1.0

Activity

Everyone knows the song "Mary Had a Little Lamb." Create your own sheep song or poem using the information on this page.

Standards: ELA- **Grade 5**: Reading 3.1; **Grade 8**: Reading 3.1

Did You Know?

Lamb is a great source for vitamin B-12

Source: Superior Farms

Is Your Lunch LOCAL?

How to stay "COOL"

COOL stands for Country of Origin Labeling. All fresh or frozen fruits and vegetables and select nuts and meat products must be labeled to indicate in which country they were produced. This makes it even easier to see if the items in your grocery cart are locally grown!

Source: www.fbnews.org

Why Buy California Grown Products?

Add Variety to Your Diet

California grows nearly half of all fruits, nuts and vegetables produced in the United States. With over 400 different crops, we have an abundance of choices when it comes to buying California grown products.

Strengthen California's *Economy*

Buying local food keeps your money circulating in your own state and helps the businesses in your community.

Support California Family Farms

When you eat California grown products you are buying from your California farmer neighbors.

Preserve California's Environment

Transportation vehicles emit gases that can decrease California air quality. By buying local products we often decrease transportation pollution that can improve the air we breathe.

It's Easy!

As Californians, we have many options for finding California grown products. Locally grown items can be found in every department of your grocery store. Purchase your food and flowers at **farmers' markets**, **farm stands** or through **community supported agriculture (CSA)** programs. You can also grow your own food and flowers through a school or home garden.

Source: guide.buylocalca.org/

Activity

Where do you find your locally grown products? Draw a picture of your favorite place to buy farm-fresh food and flowers.

Standards: Visual Arts- **Grade 3:** 2.0; **Grade 4:** 2.0; **Grade 5:** 2.0; **Grade 6:** 2.0; **Grade 7:** 2.0

Tech Check

California Grown Scavenger Hunt!

Before your next trip to the grocery store download a scavenger hunt from *kids.cfaitc.org/wgo7/cagrown* to see how many locally grown products you can find!

What does "in season" mean?

Eating with the seasons means you are buying and consuming fruits, nuts, and vegetables soon after they are harvested. **Seasonal** products are often:

- **at peak taste**
- **plentiful**
- **less expensive**

To find out if you are eating food that is in season, visit *www.cfaitc.org/seasonal*

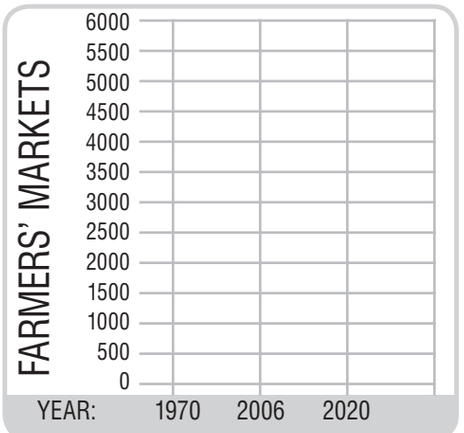
Did You Know?

5,565 jobs The number of new jobs created throughout the state if Californians bought 10% more California grown products.

340 The number of farmers' markets in our nation in 1970.

4,385 The number of farmers' markets in our nation in 2006.

Use the information about the increasing number of farmers' markets to create a line graph. Draw a trend line. If this **trend** continues, how many farmers' markets will there be in 2020?

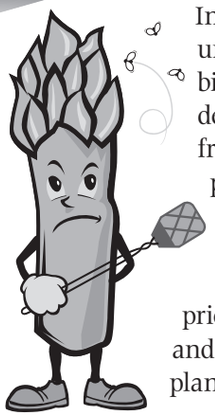


Standards: Mathematics- **Grade 4:** Statistics, Data Analysis, and Probability (SDA) 1.0; Mathematical Reasoning (MR) 3.0; **Grade 5:** SDA 1.0; MR 3.0; **Grade 6:** SDA 1.0; MR 3.0 Source: www.farmland.org/programs/localfood, California Grown Marketing Agreement

INVASION!

What is an invasive species?

An invasive species is an unwanted plant, animal, disease or insect that has been intentionally or accidentally brought from its original (**native)** home into California. These invasive species compete with **beneficial** ones for food and can cause major damage to crops.



How do invasive pests affect agriculture?

In California, losses to unwanted pests equal $3 billion annually. Pests can destroy crops by eating the fruit, damaging the roots of plants, burrowing into trees, feeding on leaves, spreading disease and more. Unwanted pests result in higher food prices, increased **pesticide** use, and damage to California's native plants and animals.

Standards: Science- **Grade 3**: 3; **Grade 4**: 2

Activity

Researchers commonly trap insects to monitor areas for invasive pests. What would you use to trap an insect? How would you attract an insect to your trap?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Standards: Science- **Grade 3**: 3; **Grade 4**: 3

Activity

Draw a line connecting the invasive insect to its country or region of origin.

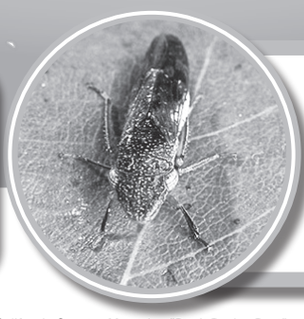
The ***Mediterranean fruit fly*** is native to *Africa* and represents a major threat to California's agriculture. Commonly known as the "medfly," it has been recorded infesting more than 300 cultivated and wild fruits.

From the *Caribbean*, the ***diaprepes root weevil*** eats citrus and other **ornamental** plants.

Originally from *South America*, ***red imported fire ants*** can damage nursery products, trees and vegetable crops. They make harvesting difficult due to painful stings to harvesters.

The ***Mexican fruit fly***, from *Mexico*, attacks more than forty kinds of fruit. It commonly targets citrus trees.

The ***light brown apple moth*** threatens more than 2,000 plants including many California natives. This pest originated in *Australia*.



The ***glassy-winged sharpshooter*** is a native of *Mexico* and the *Southeastern United States*. It can damage grapes, citrus, almonds, cherries and plums.

Standards: History/Social Science- **Grade 3**: 3.1; **Grade 4**: 4.1

Source: CA Department of Food and Agriculture (www.cdfa.ca.gov), California Country Magazine "Don't Pack a Pest"

WORD WALL

Work with a partner to define the following vocabulary words on a separate piece of paper.

Entomologist	Native plant
Invasive species	Ornamental plant
Insect	Exotic insect
Pest	Beneficial insect

Standards: ELA- **Grade 3**: Reading 1.0; **Grade 4**: Reading 1.0; **Grade 5**: Reading 1.0; **Grade 6**: Reading 1.4; **Grade 7**: Reading 1.3; **Grade 8**: Reading 1.3

Newspaper Activity

Use an agriculture publication, such as Ag Alert (*www.agalert.com*) or your local newspaper, to find articles about invasive species. Use a separate sheet of paper and write a summary paragraph explaining how invasive species could affect you.

Standards: ELA- **Grade 3**: Writing 1.0; Reading 1.0; **Grade 4**: Writing 1.0, 2.4; Reading 2.0; **Grade 5**: Writing 1.0; Reading 2.0; **Grade 6**: Reading 2.0; **Grade 7**: Writing 2.5; Reading 2.0

Go Green!

Where Is *Your* Green From?

After the dust bowl of the 1930s, thousands of farmers from Oklahoma, Kansas, Texas and other dry states migrated to California. With a strong background in farming, migrant farmers took residence in the Salinas Valley, a rich agricultural area on California's central coast, to farm the fertile land. The Salinas Valley and Monterey area are still known today as the "Salad Bowl" of the world. Many of California's leafy greens are produced in this region.

Spinach: Young leaves are incredibly nutrient packed.

Endive: Crunchy leaves are pale yellow and commonly found in appetizers.

Watercress: Spicy, robust leaves are perfect for sandwiches.

Chinese cabbage: Young leaves have a crunchy, celery-like texture.

Mizuna: Has a tangy flavor and fringed leaves.

Radicchio: Dark red leaves with white veins and a bittersweet taste.

Tech Check

Why do leafy greens thrive in the Salinas Valley and Monterey? Use online resources to investigate why the **climate** conditions in the "Salad Bowl" region of California make it ideal for growing salad essentials. Based on your findings, what can you conclude about the optimum growing conditions for leafy greens?

Benefits of Eating Green

There are numerous nutritional benefits of eating fresh, green, leafy produce! Circle any of the greens you have tasted before.

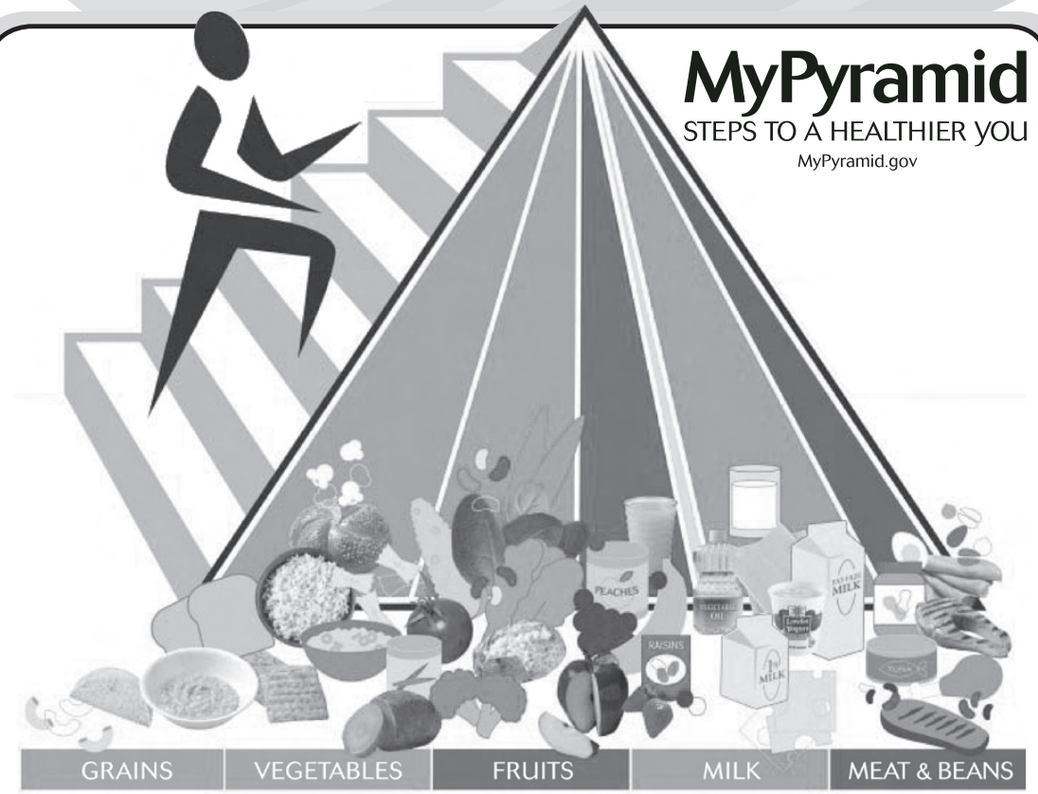
Folate	Cooked spinach, Chinese cabbage, leaf lettuce, romaine lettuce
Potassium	Beet greens, spinach, loose leaf lettuce, chard, parsley, endive
Vitamin A	Turnip greens, mustard greens, kale, collard greens, Chinese cabbage, leaf lettuce, romaine lettuce, spinach
Vitamin C	Kale, cabbage, collard greens, mustard greens, red cabbage, spinach
Iron	Spinach, chard, collard greens, parsley
Fiber	Spinach, collard greens, parsley

Sources: www.fruitsandveggiesmatter.gov, www.dolesuperkids.com

Newspaper Activity

Using pictures from your newspaper or grocery ads, create a collage of leafy greens you can incorporate into your diet. Label each leafy green.

Standards: Visual Arts- **Grade 3**: 2.4; **Grade 5**: 2.4; **Grade 6**: 2.4



Daily Food Log

Record and analyze your food consumption for one day. Place a star next to good food choices you make. This may include leafy greens and other vegetables.

Create a plan to replace unhealthy foods with healthier choices using the information from this page and the food pyramid above.

My plan:

Standards: Physical Education: **Grade 4**: 4.4; **Grade 5**: 4.1; **Grade 6**: 4.7; **Grade 8**: 4.5 Science: **Grade 3**: 3a; **Grade 4**: 2 Sources: www.mypyramid.gov

Food Grows Where Water Flows

Focusing on California Water

Where Does Your Water Come From?

Lake Oroville

A large man-made reservoir, formed by the construction of Oroville Dam between 1961 and 1968.

Lake Shasta

The largest **reservoir** in California, formed by the construction of Shasta **Dam** between 1938 and 1945.

California Delta

The largest **estuary** in North America supplies clean water to 25 million people and over 3 million acres of farmland in California.

California Aqueduct

A 444-mile, man-made **canal** that transports water from Northern to Southern California.

Photos: California Department of Water Resources

Activity

Using the map above, locate and draw the river or lake closest to your home. Draw a route illustrating how your local water source is connected to the waterways shown above.

Standards: **History/Social Science- Grade 3: 3.1; Grade 4**: 4.1, 4.4; **Grade 8**: 8.12 Science- **Grade 5**: 3d, 3e

Source: www.watereducation.org, CFAITC Agricultural Water Fact Sheet

Water Use

Water is essential, not only for sustaining life on Earth, but also allowing farmers to grow the food we eat. How much water does it take to produce your favorite meal? This chart reveals how much water it takes to produce one serving of food.

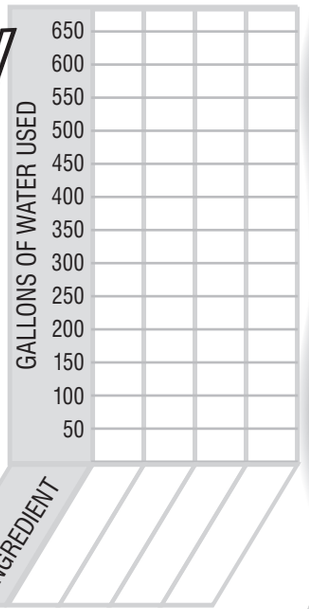
Food	Gallons
Lettuce	3
Ketchup	3
White Sugar	7
Tomatoes	8
Orange	14
Hamburger Bun	22
White Rice	25
Milk	48
Cheese	56
Egg	63
Plain Yogurt	88
Chicken	330
Hamburger Patty	616

*One gallon=16 cups

Source: Water Education Foundation "Water Facts" Slide Card

Activity

Choose four ingredients commonly used to make a hamburger. Use a bar graph to record the number of gallons used to produce each of the ingredients.



Standards: Mathematics- **Grade 4**: Statistics, Data and Probability (SDP) 1.0; **Grade 5**: SDP 1.0; **Grade 6**: SDP 1.0

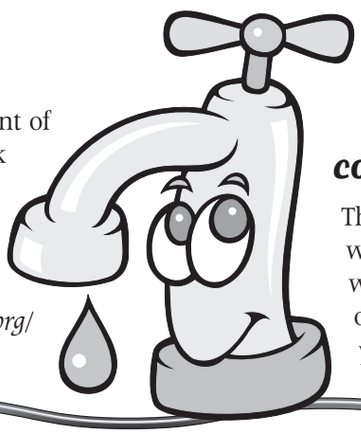
Newspaper Activity

Use the local newspaper to investigate the average rainfall in your area.

Imagine this...

Drip, drip. Tim and Tuck investigate the amount of water wasted by a leaky faucet. Tim helps Tuck realize the many effects wasting water has on our everyday lives, including the food we eat. This award-winning story, *"Water Flowing Keeps Crops Growing"* by Russell Sweet from Siskiyou County, can be viewed at *www.cfaitc.org/imaginethis/water.*

Check it out!



What can you do to conserve water?

Think of 10 different ways you can **conserve** water at home, school or anywhere else in your everyday life.

Tech Check

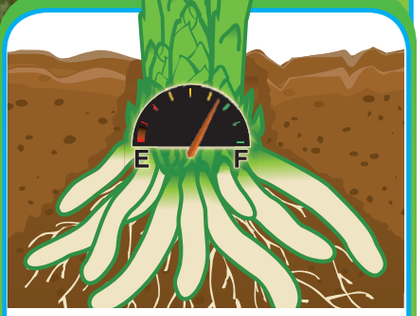
Discover the **average** amount of **precipitation** each month in your town. Create a line graph with your findings.

www.almanac.com

Standards: Mathematics- **Grade 4:** SDP 1.0; **Grade 5:** SDP 1.0; **Grade 6**: SDP 1.0

Asparagus...

Roots Like A Gas Tank



Did you know asparagus roots function like the gas tank in a car? The plant must have enough "gas in the tank" to produce asparagus spears in the spring. So how does it "fuel up?" In the summer and fall, harvesting stops, and the unharvested spears grow into a fern. Through the process of **photosynthesis**, the asparagus plant uses its leaves to collect and store **carbohydrates** in the roots. Carbohydrates are an essential form of energy for an asparagus plant, similar to the gas you put in your car.

Standards: Science- **Grade 3**: 1a, 3a, 3b; **Grade 4**: 2a; **Grade 5**: 2a, 2e, 2f, 2g; **Grade 6**: 5a; **Grade 7**: 5a, 5b

Source: California Asparagus Commission (www.calasparagus.com)

Activity

Look up the word "photosynthesis" in the dictionary. Write the definition, its pronunciation and identify the part of speech. Use the word correctly in a sentence.

In the space below, write the chemical equation for photosynthesis and draw a picture illustrating the process.

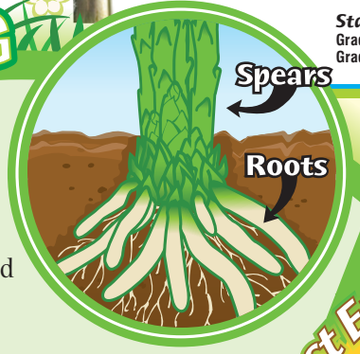
(Hint: The ingredients are water and carbon dioxide, the product is sugar and oxygen.)

Standards: ELA- **Grade 3**: Reading 1.0; **Grade 4**: Reading 1.0; **Grade 5**: Reading 1.0; **Grade 6**: Reading 1.0; **Grade 7**: Reading 1.0; **Grade 8**: Reading 1.0

Standards: Science- **Grade 3**: 1a, 3a, 3b; **Grade 4**: 2a; **Grade 5**: 2e, 2f, 2g; **Grade 6**: 5a; **Grade 7**: 5a, 5b

Asparagus Life Cycle

SPRING



Roots are full of carbohydrates.

Spears begin to be harvested and are sent to market.

SUMMER & FALL

Harvest Ends

Roots depleted of carbohydrates.

Ferns grow and transfer carbohydrates to roots below.

Roots begin to fill their "gas tank" with carbohydrates through the process of photosynthesis.

WINTER

Plant becomes **dormant**, when soil temperature drops below 50°F.

Standards: Science- **Grade 3**: 3; **Grade 4**: 2; **Grade 5**: 2; **Grade 6**: 5, 6a; **Grade 7**: 5a, 5b, 5f; **Grade 8**: 6c

Tech Check

Asparagus is one of the few perennial vegetables, which means it does not die after one season of growth. What other vegetables are perennials? Search for this information online.

...that's the spear-it!

Bigger is Better!

When you are shopping for asparagus, you will find the product in four different sizes: standard, large, extra large and jumbo. According to the California Asparagus Commission, extra large and jumbo asparagus is usually more tender than other sizes.

*Actual size shown.

Jumbo: Not less than 13/16 of an inch in diameter.

Extra Large: Not less than 10/16 of an inch in diameter.

Large: Not less than 7/16 of an inch in diameter.

Standard: Not less than 5/16 of an inch in diameter.

Activity

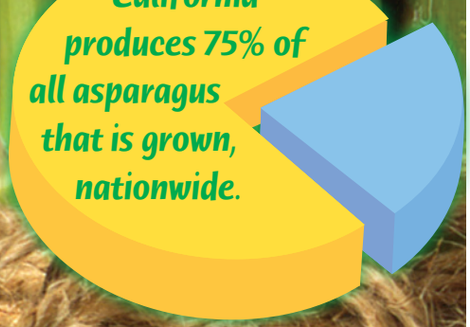
Asparagus is measured one inch above the bottom of the stem. Determine the circumference at this point for each size of asparagus.

Source: California Asparagus Commission

Standards: Mathematics- **Grade 3**: Measurement and Geometry (M&G) 1.1; **Grade 4**: M&G 3.2; **Grade 5**: M&G 1.4; **Grade 6**: M&G 1.1, 1.2; **Grade 7**: M&G 1.2

Did you know?

Asparagus folklore credits the delicious green spears for curing a variety of ailments, including toothaches!



Fresh California asparagus spears bring an extraordinary touch of style to everyone's favorite food - pizza.

California Asparagus Pizza

1	Unbaked pizza crust (12-inches)
2/3 cup	Red bell peppers, cut into ½ inch squares
½ cup	Onion, chopped
½ cup	Olives, chopped
12 oz.	Fresh California asparagus, trimmed, then blanched
¾ cup	Mozzarella cheese
¾ cup	Crumbled feta cheese

On crust, layer red bell pepper, onion and olives. Boil asparagus for 3-5 minutes to blanch. Arrange asparagus spears, tip towards edge, in a pinwheel fashion over vegetables. Evenly sprinkle cheeses. Bake at 500°F until crust and cheese are lightly browned, about 10 minutes. Cut into eight wedges.

Source: California Asparagus Commission

Newspaper Activity

Practice writing a letter to the editor persuading Californians to buy California grown asparagus. What are the benefits? How will a growing California asparagus industry influence our economy and lives?

Standards: ELA- **Grade 3**: Writing 2.3; Writing and Oral English Language Conventions (WOL) 1.0; **Grade 4**: WOL 1.0; **Grade 5**: Writing 2.4; WOL 1.0; **Grade 6**: Writing 2.5; WOL 1.0; **Grade 7**: Writing 2.4; WOL 1.0; **Grade 8**: Writing 2.4; WOL 1.0

Beat the Heat!

What do <u>you</u> have in common with a construction worker, an athlete and a farm employee? We are all at risk for heat illness. Hundreds become ill each year due to **dehydration** or over-exerting themselves in hot environments without resting to cool off. Brainstorm ways to stay safe when temperatures start rising!

Symptom	Illness	Possible Treatment
dizziness	heat stroke	water
confusion	heat rash	sports drink
cramps	heat exhaustion	shade
blisters	heat cramps	rest

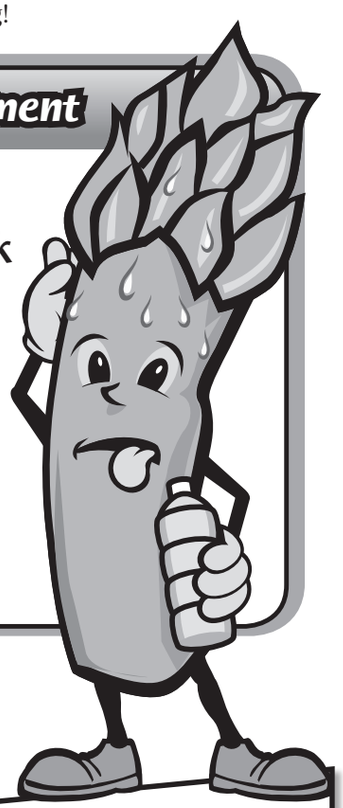
Activity

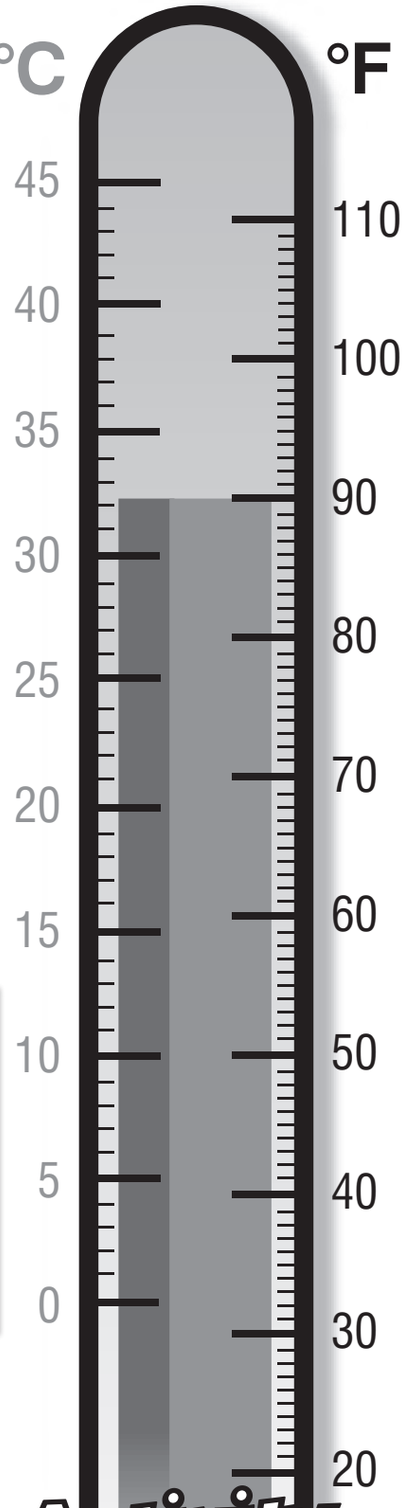
Draw a line to match each type of heat illness to the possible **symptom** and treatment.

Check your answers at *kids.cfaitc.org/wgo7/heat*

Standards: Science- **Grade 3**: 3c; **Grade 4**: 3b; **Grade 5**: 2. Physical Education- **Grade 3**: 4.5; **Grade 4**: 4.5; **Grade 5**: 4.2

Source: OSHA Fact Sheet (www.osha.gov)





What Would You Do?

We can help prevent heat illness by making good choices. Fill in the final frame of the comic strips to show how you would respond to the symptoms of heat illness.

Standards: Visual Arts- **Grade 3**: 2.0; 5.3; **Grade 4**: 2.0; **Grade 5**: 2.0; **Grade 6**: 2.0; **Grade 7**: 2.0; **Grade 8**: 2.0

Activity

86° F is what temperature in degrees Celsius?

C°= 5/9 (°F-32) _____

13° C is what temperature in degrees Fahrenheit?

F°= 9/5 (°C+32) _____

Is 42° C a dangerous temperature to work in? Why? _____

_____

_____

_____

Standards: Mathematics- **Grade 6**: Algebra and Functions (AF) 1.0; **Grade 7**: AF 1.0; Measurement and Geometry 1.1

Did You Know?

Drinking small amounts of water frequently is better than drinking lots of it less often.

Source: UC Division of Agriculture and Natural Resources

Sweating is your body's natural way of cooling itself down. The sweat leaves your skin through tiny holes called pores. When the sweat hits the air, the air makes it **evaporate** (this means it turns from a liquid to a vapor). As the sweat evaporates off your skin, you cool down.

Turkey Talk

Travelin' Turkeys

Turkeys have a rich history in a variety of cultures and countries around the world. Initially called "guinea fowl" in the Americas, early explorers took turkeys to other parts of the world where they gained popularity as a healthy and delicious food.

1492 – Turkeys become **domesticated** (tamed) in Northern Mexico.

1519 – Domesticated turkeys are taken from the Americas to Spain by explorers such as Christopher Columbus and Hernando Cortez.

1524 – Turkeys arrive in England from Spain.

1530 – English merchants introduce turkeys to the Eastern Mediterranean, or Turkish, area. This is possibly where the name "turkey" originated.

Did You Know?

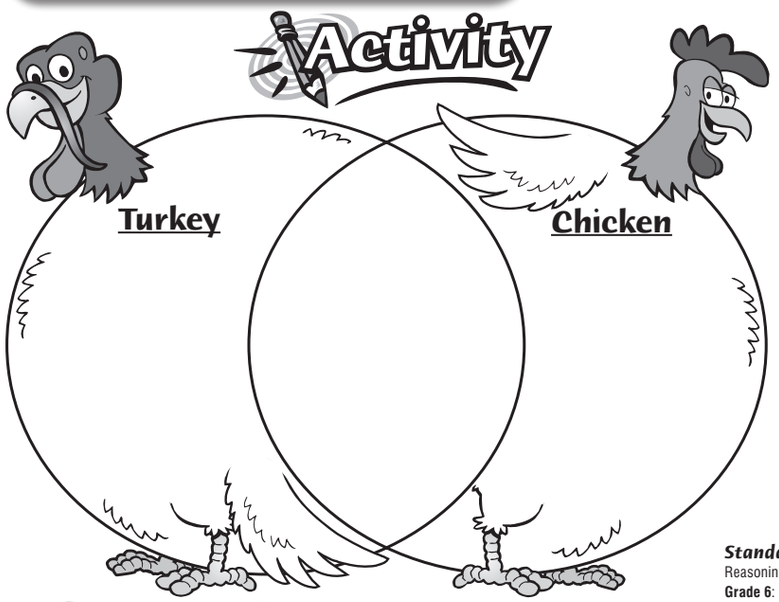
The wishbone of a turkey is actually the turkey's collarbone. Many American families hold a post-Thanksgiving competition where the person who breaks off the largest part of the wishbone will have their greatest wish come true.

Try This Activity

Draw the route "guinea fowl" traveled to claim the name "turkey."

Standards: History/Social Science- **Grade 3**: 3.1; **Grade 5**: 5.2. Science- **Grade 3**: 3d
Source: University of Illinois Extension - (www.urbanext.uiuc.edu/turkey/facts.html), www.wildturkeyzone.com

Activity



Complete the Venn diagram to determine the similarities and differences between turkeys and chickens. Use encyclopedias, Web sites and other references to find their various characteristics. This may include size, weight, physical attributes, names of males, females and young, etc. Check your answers online at *kids.cfaitc.org/wgo7/turkey*

Standards: Mathematics- **Grade 3:** Mathematical Reasoning (MR) 1.1; **Grade 4**: MR 1.1; **Grade 5**: MR 1.1; **Grade 6**: MR 1.1; **Grade 7**: MR 1.1 Science- **Grade 3**: 3a

Activity

Turkey is not just for Thanksgiving! There are many turkey products we can eat every day. Circle the turkey products you have tasted before. Place a star next to the turkey products you would like to try in the future.


Drumsticks


Turkey bacon

Turkey sausage


Deli meat


Turkey jerky


Turkey soup

Turkey burgers


Turkey franks

Standards: Science- **Grade 3**: 3a; **Grade 6**: 5c Source: California Poultry Federation, "Gobble It Up" Teacher Resource

Turkey Test

Circle the best answer.

1. Many historians believe the first Thanksgiving **originated** in ____ in 1621.
   a. Washington, D.C.
   b. Plymouth, Massachusetts

2. Which president made Thanksgiving a national holiday?
   a. George Washington
   b. Abraham Lincoln

3. Until 1935, turkeys were raised for their _____.
   a. white meat
   b. colorful feathers

4. An average turkey farmer raises _____ birds each year.
   a. 50,000
   b. 500

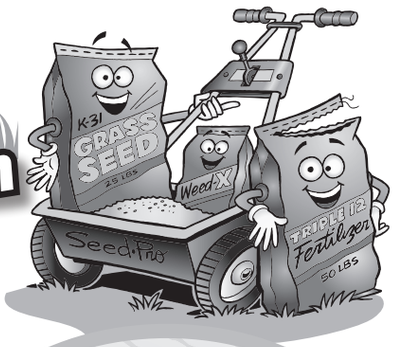
5. In the United States Thanksgiving is on the _____ Thursday in November.
   a. fourth
   b. third

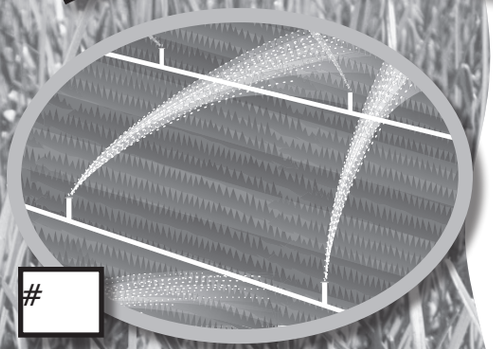
Answers: 1) b, 2) b, 3) b, 4) a, 5) a

Standards: History/Social Science- **Grade 3**: 3.3; **Grade 5**: 5.4, 5.5, 5.8
Source: California Poultry Federation, "Gobble It Up" Teacher Resource

Turf's Up!

Growing the Green

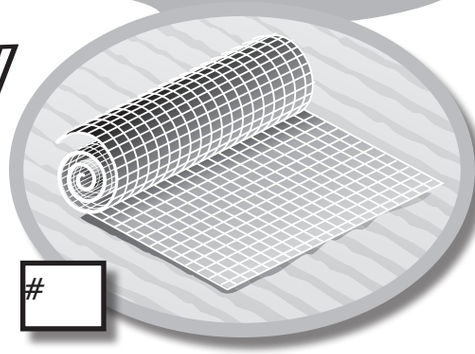




#

- Ground is plowed, harrowed and graded; seeds are planted.
- Netting is placed to secure the soil.
- Water is applied every five days.
- After seven months the sod (soil base, netting and grass) is harvested and rolled.
- Sod is laid out on the ground to create a beautiful turf for recreation or landscaping purposes. This product can be used for everything from a professional football field to your own backyard.

#



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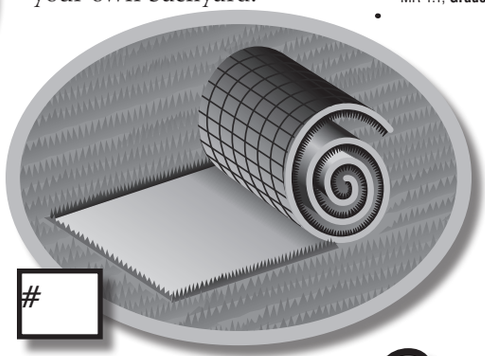
Activity

Label each of the images 1-5 based on the chronological order of the production.

Standards: Mathematics- **Grade 3**: Mathematical Reasoning (MR) 1.1; **Grade 4**: MR 1.1; **Grade 5**: MR 1.1; **Grade 6**: MR 1.1



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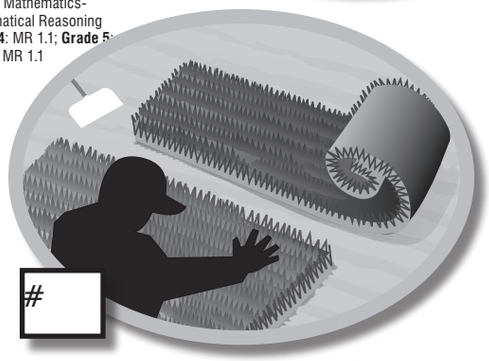

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Source: www.deltabluegrass.com

Fun Facts!

AT&T Baseball Park, home of the San Francisco Giants, has its own custom blend of sod that cannot be purchased by the public.

Many professional athletes prefer sod to artificial turf for its ability to reduce injury by natural cushioning.

Source: Zuckerman Heritage Farms, "Sod King had Dreams of Fields" California Country Magazine

Newspaper Activity

Use the sports section of your newspaper to select a soccer, football or baseball team playing today. What field are they playing on? Research the location and determine if that field uses natural turf.

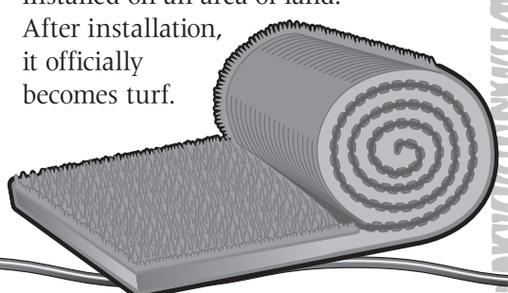
Turf's "Roll" in the Environment

Turf generates oxygen for the atmosphere and helps clean the air of pollutant gases. Turf also controls soil erosion, reduces dust, controls land temperatures, reduces noise and replenishes the **ground water.**

Science- **Grade 5**: 2f, 2g

What's In A Name?

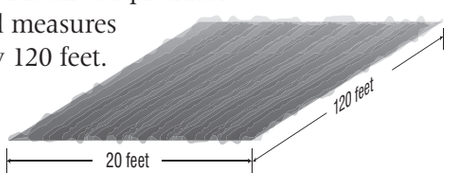
"Sod" and "Turf" are words often used interchangeably. Sod actually refers to the grass before it is installed on an area of land. After installation, it officially becomes turf.



Grassy Green Math

Sod Specifications:
Roll size: 24" x 60" = 10 sq. ft.
Roll weight: 40-50 lbs.

Your yard needs a new lawn. You decide to order sod from a local sod producer.
Your yard measures 20 feet by 120 feet.



Determine the square area (A = l x w) of your yard. _____

How many rolls of sod will you need to buy? _____

What will the total cost be if the sod sells for $0.30 per square foot? _____

Approximately how much will the sod weigh when it is delivered to your home? _____

Standards: Mathematics- **Grade 3**: Measurement and Geometry (M&G) 1.2; **Grade 4**: M&G 1.1; **Grade 5**: M&G 1.1 Source: www.deltabluegrass.com

Fresh and Fruity California Apples

Johnny Appleseed

John Chapman was born in Leominster, Massachusetts on September 26, 1774. In his early twenties, he migrated to Pennsylvania where he worked as a traveling preacher and apple nurseryman. He eventually moved west, planting apple trees for nearly 50 years. He became known as the "Appleseed Man" and later as "Johnny Appleseed." He died in 1845.

Standards: History/Social Science- **Grade 5**: 5.4
Source: US Apple Association "Johnny Appleseed: a Pioneer and Legend"

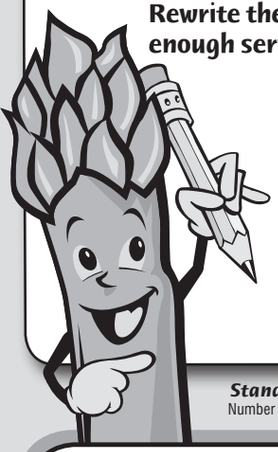
Make an apple-y delicious smoothie by blending the following ingredients.

INGREDIENTS

2 cups applesauce
1 cup 100% apple juice
1 cup orange juice
1 cup ice
2 tbsp. honey
½ tsp. ground cinnamon
½ tsp. ground nutmeg

(Makes 2 servings)

Try This Activity



Rewrite the recipe above to make enough servings for your entire class!

___ cups applesauce
___ cups 100% apple juice
___ cups orange juice
___ cups ice
___ tbsp. honey
___ tsp. ground cinnamon
___ tsp. ground nutmeg

Standards: Mathematics- **Grade 5**: Number Sense (NS) 2.0; **Grade 6**: NS 1.0

"Apple-idioms"

An idiom is a saying that does not make sense if translated literally. For example, "All ears!" means someone is ready to listen, not that they have more than one set of ears!

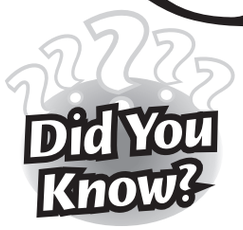
Apple Idioms:

- An apple a day keeps the doctor away.
- The Big Apple
- The apple of my eye

What other apple idioms have you heard? Create your own apple idiom! For more idioms, visit *dictionary.cambridge.org*

_____
_____
_____
_____
_____

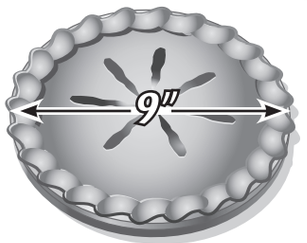
Standards: ELA- **Grade 7**: Reading 1.1; Written and Oral English Language Conventions 1.0; **Grade 8**: Literary Response 3.6
Source: US Apple Association "Apples: A Class Act"



American consumers eat an average of 46 pounds of apples every year!

Source: California Apple Commission, US Apple Association

A bushel of apples weighs (on average) 45.5 pounds. If you have 182 pounds of apples, how many bushels do you have?



You will need 2 pounds of apples to make one 9-inch pie. How many pounds of apples will you need to make four pies?

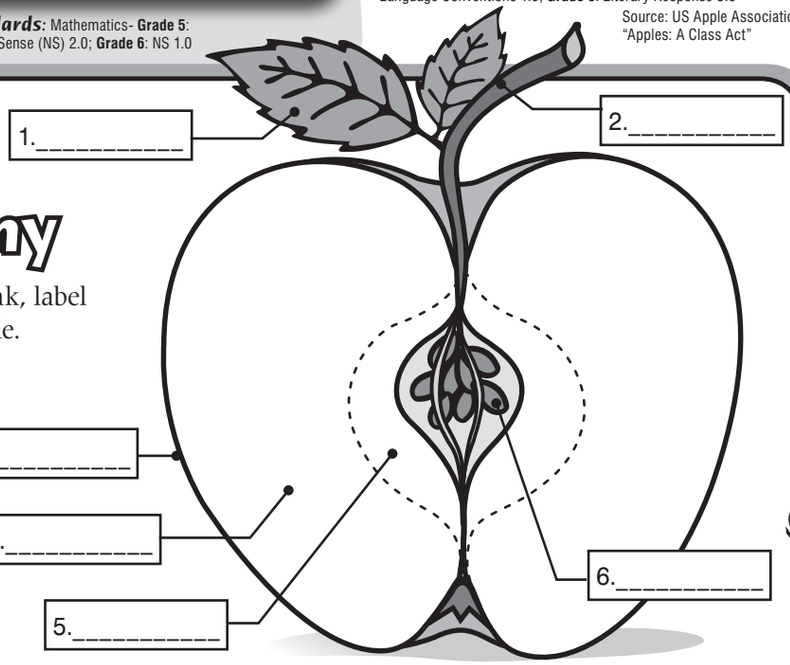
It takes 36 apples to make one gallon of apple juice. How many apples will you need to make one cup of juice? Five gallons of juice?

Standards: Mathematics- **Grade 5:** NS 2.0, Mathematical Reasoning (MR) 1.0; **Grade 6**: NS 1.0, 2.0; Measurement and Geometry (M&G) 1.0; **Grade 7**: NS 1.2; M&G 1.1
Source: US Apple Association "Apples: A Class Act", UDSA (www.nass.usda.gov)

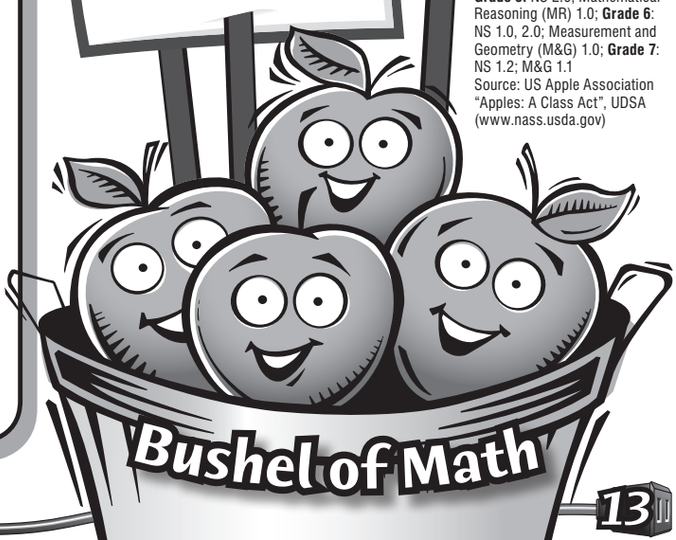
Apple Anatomy

Using the word bank, label the parts of an apple.

Word Bank
leaves
stem
flesh
core
seeds
skin (peel)



Standards: Science- **Grade 3**: 3a; **Grade 4**: 3c; **Grade 7**: 2a Source: US Apple Association "Apples: A Class Act"



Bushel of Math

There is Fungus Among Us

A Unique Environment

Edible mushrooms grow indoors in temperature and **humidity**-controlled trays or beds. Many farmers use computers to help monitor and regulate these growing conditions. The beds in which mushrooms grow contain a rich mixture of organic compost such as straw, hay, corncobs and water. The compost is **pasteurized** to destroy any germs or bacteria that might harm mushroom development. Used or "spent" mushroom compost is recycled and used as fertilizer for some crops and home gardens.

Standards: Science- **Grade 4**: 2; **Grade 5**: 2; **Grade 6**: 5e
Source: www.mushroomcouncil.com, www.americanmushroom.org

Did You Know?

Mushrooms are neither plant nor animal, but have their own biological kingdom, **fungus**.

Standards: Science- **Grade 4**: 2c; **Grade 6**: 5a, 5b, 5c;

Mushroom Varieties

Mushrooms come in a variety of shapes, colors and sizes! There are more than 250 different varieties of edible mushrooms. Below are six common varieties.

Standards: Science- **Grade 4**: 4c; **Grade 6**: 5e Source: Mushroom Council

White Button

The most popular mushroom, white buttons represent about 90 percent of mushrooms consumed in the United States.

Try them sliced and sautéed on pizza or in a quesadilla.

Crimini

Also known as baby 'bellas, criminis are similar in appearance to white buttons, but are more tan in color.

Their hearty taste makes them an excellent addition to beef and vegetable dishes.

Portabella

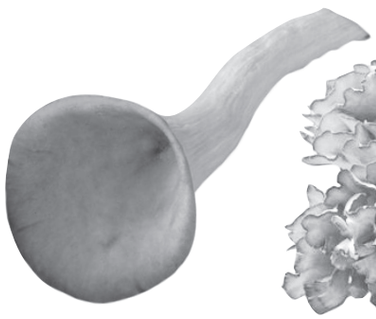
Portabellas have tan or brown caps and measure up to 6 inches in diameter.

Grill and serve them as "burgers" on toasted buns.

Enoki

With a crunchy texture, enoki have small caps and long, spindly stems.

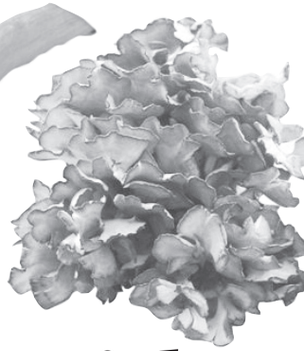
Try them in salads and sandwiches.



Oyster

Oyster mushrooms can be gray, pale yellow or even blue!

Try them over pasta with steak and red peppers.



Maitake

Maitake are fan-shaped, without caps.

Use in side dishes and soups for a richer taste.

Activity

An acrostic is a poem in which each letter of a word spells out another message relating to the word. Complete this acrostic with information you have learned about mushrooms.

F abulous way to add flavor to everything from sandwiches to soups!

U _____

N _____

G _____

U _____

S _____

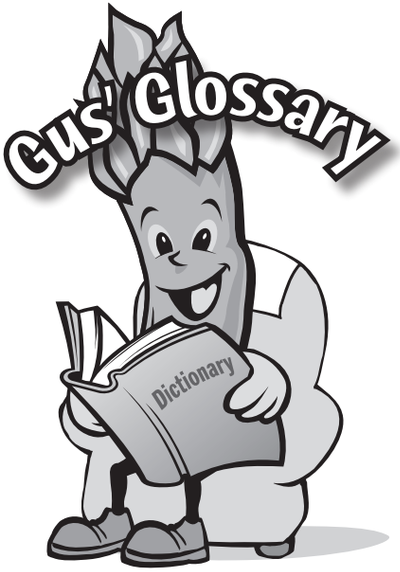
Standards: ELA- **Grade 3**: Written and Oral English Language Conventions (WOC) 1.0; **Grade 4**: Writing 2.4; WOC 1.0; **Grade 5**: WOC 1.0; **Grade 6**: WOC 1.0; **Grade 7**: Reading 1.1; WOC 1.0; **Grade 8**: Reading 3.1

Tech Check

Choose one mushroom variety and search for a related recipe at *www.mushroominfo.com*. Try this recipe with your family this week!

Caution!

Be careful what you eat!
Some mushrooms can be poisonous. Only eat mushrooms bought at a grocery store or other produce market.



Average – The value obtained by dividing the sum of a set of quantities by the number of quantities in the set.

Beneficial – Producing or promoting a favorable result; advantageous.

Canal – An artificial waterway or artificially improved river used for travel, shipping or irrigation.

Carbohydrates – Any of a group of organic compounds that includes sugars, starches and celluloses and serves as a major energy source in the diet of animals.

Climate – The meteorological conditions, including temperature, precipitation and wind, that characteristically prevail in a particular region.

Community Supported Agriculture (CSA) – A partnership between a farm and a community of supporters that provides a direct link between the production and consumption of food.

Conserve – To use carefully or sparingly, avoiding waste.

Crude fat – Any of a large number of oily compounds that are widely found in plant and animal tissues and serve mainly as a reserve source of energy.

Crude fiber – The indigestible portion of plant foods that move food through the digestive system, absorbing water and easing defecation.

Crude protein – A fundamental component of all living cells. Necessary for growth and development of muscle.

Dam – A barrier constructed across a waterway to control the flow or raise the level of water.

Dehydration – Excessive loss of water from the body from illness or fluid deprivation.

Domesticated – To train or adapt an animal or plant to live in a human environment and be of use to humans.

Dormant – A condition of biological rest or inactivity characterized by cessation of growth or development.

Economy – The system of production, distribution, and consumption of goods and services.

Entomologist – A person who studies the classification, life cycle and habits of insects and related life forms

Estuary – The part of the wide lower course of a river where its current is met by the tides.

Evaporate – To convert or change into a vapor.

Farm stand – A temporary or permanent structure used for the display and sale of agricultural products.

Farmers' markets – A location where farmers sell their agriculture products directly to the public.

Fungus – Any of numerous eukaryotic organisms of the kingdom Fungi, which lack chlorophyll and vascular tissue.

Ground water – Water beneath the earth's surface, often between saturated soil and rock, that supplies wells and springs.

Humidity – Dampness, especially of the air.

Lanolin – A fatty substance obtained from wool and used in soaps, cosmetics, and ointments.

Native – Originating, growing, or produced in a certain place or region; indigenous.

Origin – The point at which something comes into existence or from which it is derived.

Ornamental – Plants typically used for flower gardens, house plants, landscaping or cut flowers.

Pasteurized – The process of heating liquids for the purpose of destroying bacteria, protozoa, molds, and yeasts.

Pesticide – A chemical used to kill pests, especially insects.

Photosynthesis – The process in green plants and certain other organisms by which carbohydrates are synthesized from carbon dioxide and water using light as an energy source.

Precipitation – Any form of water, such as rain, snow, sleet, or hail, that falls to the earth's surface.

Reservoir – A natural or artificial pond or lake used for the storage and regulation of water.

Seasonal – Applies to what depends on or is controlled by the season of the year.

Symptom – An indication of disorder or disease, especially when experienced by an individual as a change from normal function, sensation, or appearance.

Trend – The general direction in which something tends to move.

Waterways – A navigable body of water, such as a river, channel, or canal.

Resources:

American Farm Bureau Federation
www.fb.org

American Farmland Trust
www.farmland.org

California Apple Commission
www.calapple.org

California Asparagus Commission
www.calasparagus.com

California Department of Food and Agriculture
www.cdfa.ca.gov

California Farm Bureau Federation
www.cfbf.com

California Poultry Federation
www.cpif.org

Colorado State University Extension
www.ext.colostate.edu

Dole SuperKids
www.dolesuperkids.com

Mushroom Council
www.mushroomcouncil.com

Oregon State Agriculture in the Classroom
aitc.oregonstate.edu

OSHA
www.osha.gov

Produce for Better Health Foundation
www.fruitsandveggiesmorematters.org

Superior Farms
www.superiorfarms.com

UC Division of Agriculture and Natural Resources
www.ucanr.org

University of Illinois Extension
www.urbanext.uiuc.edu

US Apple Association
www.usapple.org

Water Education Foundation
www.watereducation.org

Zuckerman Heritage Farms
www.deltabluegrass.com

To request a free
What's Growin' On?
Teacher's Supplement that will enhance the use of this newspaper, visit *www.cfaitc.org/wgo* or call (800) 700-2482.

Activity

Choose five words from the glossary and write the words on the numbered lines. Find each word in the dictionary and write the guide words for that page in the area provided.

	Glossary Words	Guide Words	
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

Standards: ELA- **Grade 3**: Reading 2.7; Writing 1.3; **Grade 4**: Reading 2.2

Fun Facts!

A 3-ounce serving of lamb has 175 calories.

Source: Superior Farms

Granny Smith is the most popular apple variety grown in California.

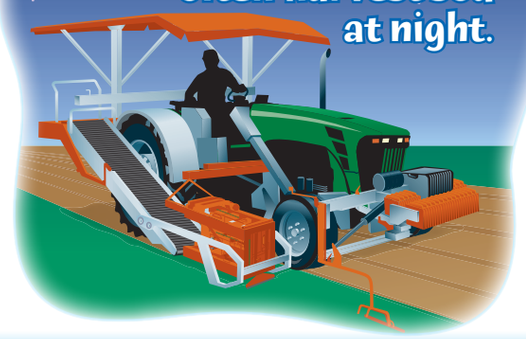
A leaking toilet wastes about 60 gallons of water every day. Without repair this will add up to 22,000 gallons per year.

Source: Water Education Foundation "Water Facts" Slide Card

Recipe Idea:

Wrap a hamburger in lettuce instead of a bun for a creative "green" meal

To beat the heat farmers often harvest sod at night.



Source: Zuckerman Heritage Farms, "Sod King haDreams of Fields" California Country Magazine

Acknowledgements

The California Foundation for Agriculture in the Classroom (CFAITC), a 501(c)(3) nonprofit educational organization, provides educators with low-cost and free materials, training and information to increase student understanding of California agriculture while teaching the core disciplines. Contact CFAITC or *www.cfaitc.org* for:

- Resources/Lesson Plans
- Story-writing Contest
- Conference Opportunities
- Newsletters
- Web Site (*www.cfaitc.org*)
- Kids' Corner (*kids.cfaitc.org*)

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NIE Manager: **Kelley Arakelian, The Fresno Bee**

California Foundation for Agriculture in the Classroom

California Asparagus Commission

California Farm Bureau Federation

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Yosemite Farm Credit "Helping Our Members Prosper"

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Olive Hill Greenhouses, Inc. Pollution Fighting Live Plants for Healthier Home and Office Environments