

My name is Woodsy and I am a Dusky-Footed Woodrat who is anxious to take you with me on my journey – out of my coastal forest den and through many different areas of our Golden State's bountiful agriculture industry. We will embark on some very interesting adventures involving the number one industry in California – AGRICULTURE!

Agriculture is all around us! It is truly a part of every Californian's life in an astonishing number of ways we may not even realize. Did you know that less than 2% of the United States population lives on farms today and that California is the largest agricultural state in the country! We all need to appreciate how lucky we are and how important California is in supplying food to the nation and the world.

As we travel, you will notice bold words on each of the following pages – these are "Woodsy's Words of Wisdom" that are listed and defined in my glossary on page 15.

I also invite you to visit the interactive Kids' Corner online at www.kids.cfaitc.org where you will find games, recipes, and kid-friendly links to more information about the topics in this newspaper.

So come along as I scamper across these pages and share a little guy's view into the great big world of California agriculture!

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**Teachers:** This year is of special importance to California Ag in the Classroom. We are celebrating our 20th successful year reaching educators and others who care about and support agricultural education. This 5th edition of What's Growin' On? will connect you and your students to the industry and invite you to engage in hands-on opportunities to learn more about agriculture's past and present-day practices. We hope to inspire students to learn even more about their food and fiber by including a variety of fun and educational articles and activities.

The activities throughout this publication were created and reviewed by educators and meet third through eighth grade California Public School Content Standards.

We hope these interesting and relevant activities will provide a creative method of bringing real life into the classrooms of students who may one day take part

in preserving California's agricultural legacy. Your \_ continued support is greatly appreciated!

# Discover the many lasting

lionia Ag

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Research the Dusky-Footed Woodrat or some other forest animal, its habitat and specialized features of the animal which allow it to survive. Perhaps contact a forest service person and interview them on their knowledge of forest animals. Write a report with your findings of facts and details. Be sure and use titles, a table of contents, indexes, and other text features. You may include illustrations and/or graphics. Share your information by giving an oral presentation.

Resources: www.wildcalifornia.org, www.calforestfoundation.org

Standards: English - Language Arts (ELA) - Grade 3 - Reading 2.7, Writing 1.1; Grade 4 - Reading 2.2, Writing 1.7, 2.3b, 2.3c; Grade 5 - Reading 2.3b, 2.3c, Listening and Speaking (LS) 2.2b, 2.2c; Grade 6 - Writing 1.1, 2.3b, 2.3c, LS 1.6, 2.2b; Science- Grade 3 - Life Sciences 3a; ELA Grade 4 - Writing 1.6, 1.8; Grade 5 - Reading 2.1

7

# Today's Horsepower

### Moving Back in History

Less than 100 years ago, farms were much smaller than they are today. A farmer was able to walk his field. An average farm was about 150 acres. That's about the size of 150 football fields. Today,

the average farm size varies depending on the crop. An avocado grove can be 20 acres, whereas a beef cattle operation could consist of 1,500 acres. You can see why farmers use pick-ups and **All Terrain Vehicles (ATVs)** to travel through their fields!

For farmers, **ATVs** and other small vehicles are more than sports toys. They are work vehicles. Farmers have to check on their orchards and crops on a regular basis. They need to make sure that sprinklers are working properly, that drip irrigation lines are at the right

location, and that fruit at the other

end of the orchard is ready to harvest. Like motorcyclists, **ATV** riders should utilize proper safety practices and wear a protective helmet while operating their vehicle. Some farmers' vehicles are even specially equipped with Global Positioning Systems (GPS) that show where the vehicle is in the field. So, the next time you see an **ATV**, think of it as another handy tool for farmers.

Cattle ranches still depend on horses to access rough **terrain** and **wilderness** areas.

HORSE

**RULES** 

SAFE

TERRAIN

TRAILS

(Check your answers on www.kids.

PROTECTION

TECHNOLOGY

BOOTS

FIELD

GPS

HAUL

HELMET

cfaitc.org/wgo5/atv)

**GLOVES** 

GOGGLES

CONTROL



**Horsepower** is defined as work done over time. One horsepower is 33,000 lb.-ft./minute.

In other words, if you were to lift 33,000 pounds at the rate of one foot per minute, you would have been working at the rate of one horsepower. (For instance, your family's lawnmower may have 6.5 horsepower or even more!)



Create a 500-word multiparagraph persuasive essay about the need for helmets while using **ATV**s. Be sure to use complete sentences. Edit and revise your essay before turning in the final draft.

**Standards:** ELA - Grade 4 - Writing 1.1, 1.2, 1.10, Written and Oral English Language Conventions (WOELC) 1.1; Grade 5 - Writing 1.2, 2.4; Grade 6 - Writing 1.2, 2.5; Grade 7 - Writing 2.4; Grade 8 - Writing 2.4; ELA

TINISH Y

Take an **ATV** ride with Tyler as he and his visiting "city kid" cousin, Zach, zoom around the family ranch while Tyler shares a thing or two about his way of life living on a cattle ranch. The awardwinning story "*What's the Difference?*" by Tyler can be viewed at www.cfaitc. org/imaginethis/difference.

Want to be in the know about ATV Safe Riding Tips? Check out the 4-H Community ATV Safety Program at www.atv-youth.org

J	Ι	Р	J	Н	F	Z	Ι	Y	J	М	Ι	S	Ν	0
J	М	R	Е	S	Е	W	N	Y	D	D	K	F	Ι	Т
G	Q	0	G	Т	Е	L	0	R	Т	Ν	0	С	А	Н
V	Ζ	Т	V	K	S	L	М	D	L	0	В	Ι	R	Е
Т	Т	Е	S	R	0	Н	G	Е	V	Q	0	Q	R	J
D	Р	С	М	V	Ζ	М	Р	G	Т	М	0	М	Е	В
G	Т	Т	R	А	Ι	L	S	Е	0	Е	Т	R	Т	F
Х	М	Ι	G	Р	S	С	С	U	F	G	S	S	Ι	R
V	V	0	D	Η	Т	Н	А	А	W	Κ	R	Е	U	Е
Q	U	Ν	Ι	Т	Ν	V	S	Е	W	0	L	L	K	Ν
D	S	Р	Т	0	K	Е	А	0	F	D	L	А	В	Х
Х	W	Е	L	Е	V	Y	V	G	Р	С	U	Κ	S	D
Ζ	S	0	L	0	Ι	Х	F	0	J	F	А	Ζ	G	М
S	G	Ν	L	U	Ζ	Р	R	W	Н	Р	Н	V	С	Y
Y	Ζ	G	А	Ν	R	S	Т	Р	Ι	Y	R	Q	Ι	Т
-														

# Thatwas Then, This is Now

- 1793 Eli Whitney invented the cotton gin.
- **1798** John (Johnny Appleseed) Chapman planted some of his first apple trees in western Pennsylvania.
- 1850 About 75-90 hours of labor was required to produce 100 bushels of corn with walking plow, harrow, and hand planting. Yields were about 40 bushels per acre.
   1862 President Abraham Lincoln creates the first



American Farmers are the world's most productive! American farmers are business people, community leaders, environmentalists, animal caretakers, scientists, family men and women.

can

Number of people fed annually by one American farmer: Year Number of People Today 144 1990 129

15

73

46

27

19

(Source: American Farm Bureau Federation Farm Facts)

1980

1970

1960

1950

1940

- Department of Agriculture. Lincoln also signed the Morrill Land Grant College Act.
- 1869 Transcontinental railroad completed.
- **1900** The amount of labor needed to produce 100 bushels of corn is now only 35-40 hours using plow, harrow and planter. Yields remain about the same as in 1850.
- **1902** First U.S. factory for tractors driven with internal combustion engines was built.
- **1921** First major aerial dusting of crops.
- **1932** Rubber wheels improve the tractor.
- **1935** Rural Electrification Administration brings electricity to many farmers.



# Average Prices of Food - Retail

(Prices are in cents per pound, unless otherwise indicated.)

	1950	2005
APPLES	12.0	86.6
BREAD	14.3	88.9
WHOLE MILK (1/2 gallon)	38.6	159.9
TOMATOES	24.3	106.0
BACON	63.7	264.2
POTATOES	4.6	39.8
CHICKEN	59.5	112.3
SUGAR (5 LBS.)	48.7	230.8
EGGS (Dozen)	60.4	202.2
BUTTER	72.9	301.6
CORN FLAKES	18.5	214.2

(Source: California Ag Statistics – USDA-NASS)

- **1945** Commercial fertilizer use helps increase crop yields.
- **1946** National School Lunch Act initiated ("Free lunch").
- 1954 Food for Peace Program enacted.
- 1959 Mechanical tomato harvester developed.
- **1966** Scientists deciphered the genetic code along the DNA chain, paving the way for biotechnology.
- **1987** With new technology less than three hours of labor and about one acre of land are required to produce 100 bushels of corn.
- **1994** Farmers begin to use satellite technology to plan and track their farming practices. The use of conservation tillage methods, which leaves crop residue in the field to combat erosion, continues to rise.
- **1997** The first weed and insect-resistant biotech crops soybeans and cotton are commercially available.
- 2004 Worldwide, there are 8 million farmers in 18 countries growing **biotech** crops on more than 167 million acres.

(Sc	urce: USDA Agriculture	Research Service
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 Standards:
 ELA - Grade 3 - Reading 2.7, Grade 4 - Reading 2.2, Grade 5 

 Reading 2.1, Grade 6 - Reading 2.1; Math-Grade 3 - NS 1.1, 2.1, 3.3 AF 1.1, 1.2, 2.1

 MR 1.0, 2.3, 2.4, 2.6, Grade 4 - NS 1.1, 2.1, 3.1 SDP 1.3 MR 1.0, 2.3, 2.4, 2.6, Grade 5 - NS 2.1, AF 1.1 MR 1.0, 2.3, 2.4, 2.6, Grade 7 - NS 1.2 MR 1.1, 1.3, 2.5, 2.6, 2.8

1	Comn	nodity	Valu	ie St
1	Milk and (	Cream	\$5,223,062,	000
2	Grapes		3,165,715,0	00
3	Nursery Ci	cops	2,433,346,000	<b>ANGE</b>
4	Almonds	2,33	37,140,000	
5	Cattle and	Calves 1,740	0,198,000	
6	Lettuce	1,470,15	52,000	
7	Hay	1,150,613,	,000	
8	Strawberri	es 1,110,174,0	000	liforni
9	Floricultur	e 983,768,00	00	
10	Tomatoes	941,928,000		
11	Chickens	714,788,000		
12	Oranges	671,192,000		
B	Cotton	633,696,000	COM	Imoul
14	Pistachios	577,320,000		BARA
15	Timber	546,941,000		WA
16	Walnuts	539,600,000		
17	Broccoli	513,758,000		370
18	Carrots	455,207,000		3
19	Rice	407,778,000		
20	Lemons	324,275,000	- NU11	

(Source: California Ag Statistics – USDA-NASS)



Using the value of the commodities listed above: 1) round off numbers to the nearest ten, hundred, thousand and million. 2) write numbers in words. 3) read and write the numbers in scientific notation. **Standards:** ELA - Grade 3 - Reading 2.7, Grade 4 - Reading 2.2, Grade 5 - Reading 2.1, Grade 6 - Reading 2.1; Math - Grade 3 - NS 1.1, 1.4; Grade 4 - NS 1.1, 1.3; Grade 5 - NS 1.1 AF 1.1





Create and make your own salsa recipe. Using the ingredients illustrated above, choose, chop and mix your favorites to create your own special salsa! What color will your salsa be?

#### Tomatoes - by Anonymous

- After working in the garden one hot summer day,
- I declared I was allergic to tomatoes, and that's all I had to say.
- My mother said, "Are you sure?"
- and went into the kitchen, near the refrigerator...
- She pulled out my favorite after-school treat.
- I licked my lips, looked at the pizza and said, "Let's eat!"
- "You can't," she said. "You will swell up and get a rash."
- I looked confused and then said, "Oh yes, I guess I'll have some hash."
- She cooked it up with some fluffy scrambled eggs.
- I went for catsup and she said, "No way!"
- "You can't put that on your eggs. You might die."
- I looked at her sadly and started to cry.
- If I had thought first about how many things are in this fruit,
- I would have thought of a different reason why I pulled the tomato plants out by their roots.

Studies show that processing tomatoes are the leading source of the antioxidant lycopene in the American diet.

95% of the processing tomatoes and about 75% of all tomatoes are grown in California! (Source: CFAITC Tomato Fact Sheet)

## <sup>4</sup>CATCH UP<sup>77</sup> On Tometo History

Tomatoes first grew as wild, cherrysized berries in the **South American Andes**. But the tomatoes we eat today were developed in Mexico. Tomatoes are known as a "**tomatils**" in Mexico. Over the past 100-plus years, tomatoes have become very popular, not only as a fresh product in salads but in many other ethnic food dishes. Italian and Mexican cuisine feature a variety of tomato recipes including salsa, pasta, and tortilla sauces. And of course tomatoes are used to make the all-American favorite, catsup.

There are two kinds of tomatoes grown by farmers. **Fresh market tomatoes**, which are purchased at grocery stores for use in salads and other dishes, and **processing tomatoes**, which are used to make tomato sauce, catsup, salsa and other processed products. Generally, fresh market tomatoes are picked by hand while processing tomatoes are picked by machine.

**Processing Tomatoes** 

(Source: CFAITC Tomato Fact Sheet)



ACEENCE

Label the tomato plant parts and describe the function of each part.

**Fresh Tomatoes** 

(Check your answers on kids.cfaitc.org/wgo5/tomatoes)

Standards: ELA - Grade 3 - Reading 2.7, Grade 4 – Reading 2.2, Grade 5 - Reading 2.1; Science-Grade 3 – Life Sciences 3a; Visual Arts - Grade 5 – CRA 5.1, Grade 6 – Creative expression 2.1

Make a Venn diagram which compares processing tomatoes to fresh market tomatoes. Analyze, compare and contrast the differences. Write down your conclusions in complete sentences.

**Standards:** ELA - Grade 3 - Reading 2.7 WOELC 1.1, Grade 4 - Reading 2.2, WOELC 1.1, Grade 5 - Reading 2.4, Grade 6 - WOELC 1.1; Science- Grade 6 - Resources 6c

#### Americans' favorite **beef cuts** are leaner than ever before. In fact, 29 cuts of beef meet government guidelines for lean, which means not only does beef taste great, but it's good for you too!





in thickest part registers 135° F for medium rare; 150°F

for medium. Let stand 15 minutes. (Temperatures

medium.) Carve roast across the grain; season with

will rise to reach 145° for medium rare; 160°F for

salt and enjoy!

Look in your newspaper's grocery ads and record the price per pound of five different cuts of beef (i.e. hamburger, roasts, etc.). Place them in order of least expensive to most expensive.

#### Did you know that more than one third of California is covered in **forests**? The job of a registered professional forester is to maintain the delicate balance of nature while providing the incredible number of **forest** products we use every day. In the past, the **forest** was seen as an infinite resource. We now know forests are an important part of our planet. They are complex ecosystems providing habitats for a diversity of plant and animal life. Nothing goes to waste in the **forest**. Computers and laser-guided saws get the maximum amount of lumber from every log. Sawdust and wood scraps are used to generate electricity at the saw mill. Focusing on the future, foresters continue to work with scientists to find ways to improve and maintain healthy forests and efficiently use this valuable **renewable** resource.

McDougall @ USDA-NRCS PLANTS Database

(Source: California Forest Products Commission)

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fact.

# E

Incense cedar isn't really a cedar. It's mistaken for a cedar because it has aromatic wood like true cedars growing in Europe, Africa and Asia. Incense cedar is used for moulding, decking, and siding, but the best known use is for pencils.

CHENRY OF CONTRACT OF CONTRACT

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Today's technology what ? termony safe. what ? termand safe. 's efficient and safe. Petricient and Sare, Wirthally 100% of the

V	All of thes products.
	books
	cosmetics
	paper
	postage stam
	baseball bat
	baby cereal

oulik

se items contain wood or **forest** Check the ones you use:

> toilet paper musical instruments nail polish toothpaste ips 🗌 cellophane (Saran) wrap bread

(Source: Forest Foundation . \_esson Plan – Forest Products game)

Nesent

Moving logs in the past was a slow and dangerous process.

Past

...the Dusky-Footed Woodrat feeds mainly on woody plants, especially live oak, maple, coffeeberry, alder and elderberry. Active mainly at night, the woodrat builds its home from sticks and leaves. Their dens can be as large as eight feet tall and eight feet wide! They usually have two to three babies per year.

# Help Woodsy to get back to his den!

Wood mainly settlers used furniture, and for fuel

mesen

The Dusky-Footed Woodrat leaves a trail by cutting through grasses on the forest floor. Help "Woodsy" follow the trail of grass to his den.

rtation

# Did you know?

California forests are home to more than 4,000 native plants and 600 wildlife species. Biologists use satellites to help study these habitats.



#### **Scavenger Hunt:** In your newspaper, find as many items

find as many items as you can that are made from wood forest products. Then look at other sources such as magazines to find more items. *Standards*: ELA - Grade 3 – Reading 2.7; Science - Grade 6 – resources 6C

164371

(Source: Sierra Pacific Industries, California Forest Products Commission)

today, consumers use

Today, moving logs is done more efficiently and with less environmental impact.

Paste

Present

# ज्यात्री नियाँदे

The fruit is shaken off the tree and transferred via convever belt into bins which

---- then go to the dehydrator. Approximately 75,000 tons are exported to more than 50 countries each year. The majority are grown in the Sacramento and San Joaquin Valleys where the rich soil and the long, warm and clear growing season provides ideal growing conditions. The **antioxidants** suppress the growth of various pathogens.



### Pears

This fruit dates back to ancient times. Bartlett cuttings came west when the '49ers headed for the great California Gold Rush and continue to grow and flourish in the state today.

Their trees are in production for an average of 50 – 75 years. California ranks number one in Bartlett production, with 50% of the nation's Bartlett crop, and produces 30% of all pears grown in the United States. They are grown in two primary regions of the state on 15,000 acres!



## Raisins

Earliest known grape vine on which these raisins grew dates back 35,000,000 B.C. In 154 A.D. Ancient Romans used them as rewards and for cur-

**\_\_\_** rency. George Washington was known to eat these as a staple at dinner. During the Civil War, these were used as a common ingredient in "war cakes." Astronaut Scott Carpenter ate these with his granola and was the first person to carry and eat them in outer space.

Today they are known as a good source of

This fruit grows year round – thanks to growers who vigorously prune their vines

---- in the winter. They were first cultivated as far back as 6000 B.C. near northern Iran. California cultivation began in 1769 when Spanish friars established vineyards at the missions to make sacramental wine. California is one of the largest producers of this fruit in the world and also produces 97% of the nation's commercially grown table grapes.





To encourage fruit production their trees are planted with a minimum density of 121 trees per acre. Chinese writings have given refer----- ence to this fruit dating

back 3,000 years. Although they are grown in 41 states, California accounts for nearly 100% of the commercial production in the nation. This fruit is fat free and provides Vitamins A and C, carbohydrates and fiber.

## Cantaloupe



Beds are raised so only the plants' roots get watered. This keeps the surface of the beds dry so the fruit won't contact the moist soil which can result in cosmetic blemishes. In 2005,

California produced about

-----

75% of the nation's domestic supply with Fresno County growing more than any other county in the state. A six-ounce serving (roughly a quarter of a melon) provides 100% of U.S. recommended daily allowance of Vitamins A and C.

(Sources: CFAITC Commodity Fact Sheets, California Raisin Marketing Board)

#### Match these facts with the fruits described on the left. Write the fact numbers by each corresponding fruit.

- 1. Grown in two primary regions on 15,000 acres.
- 2 A six-ounce serving provides 100% of Vitamins A & C.
- 3. Spanish friars established vineyards.
- 4. Contains antioxidants.
- 5. Produces 97% of nation's supply.
- 6. Nearly 100% of nation's supply comes from California.
- 7. Growing beds are raised to avoid cosmetic blemishes.
- 8. Romans used as currency.
- 9. Approximately 75,000 tons are exported to 50 countries each year.
- 10. Cuttings came west with the '49ers.
- 11. The Chinese referenced this fruit in their writings over 3,000 years ago.
- 12. They were first cultivated as far back as 6,000 B.C. near northern Iran.
- 13. In 2005, California produced 75% of the nation's supply.
- 14. Astronauts eat these in outer space.
- (Check your answers on www.kids.cfaitc. org/wgo5/fruitfacts)

Standards: ELA - Grade 3 - Reading 2.7, Grade 4 - Reading 2.2



price per pound and place

expensive to most costly.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ Find pictures of these fruits in your newspaper, note the 4.\_\_\_\_\_ 5. \_\_\_\_\_ them in order from the least 6. \_\_\_\_\_



Write a story imagining yourself as one of the fruits in the fruit bowl. Revise and edit it. Submit story in the "Imagine this..." story writing contest! Check out www.cfaitc.org/imaginethis

Standards: ELA - Grade 3 - Reading 2, 2.7, Writing 1.4; WOELC 1.1 ; Math- Grade 3 - NS 1.1, 1.2; ELA - Grade 4 - Writing 1.10. Grade 5 - Writing 1.6. Grade 6 - Writing 1.6





# **cru•ci•fer•ous** (krew-sih´fer-uhs)

adj. Pertaining to, or resembling, a family of plants which have four petals arranged like the arms of a cross such

as the mustard, radish, turnip, etc.

(Source: Webster's Dictionary)

Cruciferous vegetables contain antioxidants (beta carotene and the compound sulforaphane) and may provide protection against certain cancers. These vegetables, which are all high in fiber,

vitamins and minerals, are: broccoli, Brussels sprouts, cabbage, cauliflower, chard, kale, mustard greens, rutabagas and turnips. (Source: © Copyright Barron's Educational Services, Inc. 1995 based on THE FOOD LOVER'S COMPANION, 2ND edition, by Sharon Tyler Herbst.)

		EDIBLE	PLANT PAI	RT
CRUCIFE	EROUS TABLE	Flowers	eaves Roots	eem
	Broccoli			
	Radishes			
Brussel	s Sprouts			
1000	Kale			A CARE
Ca	uliflower			Ala
	Turnips			
Collar	d Greens			
and the second s	Cabbage			
	10	4	4	Const Constant

They lower the risk of

tobacco-related cancers,

including cancers from

second-hand smoke!

#### Use this information to complete the chart

Many parts of cruciferous vegetables are eaten, such as flower heads and roots. They can be served in several ways:

Raw	Boiled
Sautéed	Stir-fried
Steamed	Pickled

\*\*\*

One vegetable on the chart has more than one edible plant part. Can you guess which one?

Standards: Grade 3 - Reading 2.7, Grade 4 - Reading 2.2, Grade 5 - Reading 2.1

64373

(Check your answers on www.kids.cfaitc. org/wgo5/cruciferouscrew)

de la

## Gardens of the Past

2

Native Americans planted "The Three Sisters" gardens, consisting of beans, corn and squash. This form of **companion planting** was beneficial to garden plants. The bean vines wrapped around the corn stalks, the beans put nitrogen ([N]) back into the soil by converting air, and squash was used as a cover crop which controlled weed growth and kept deer from eating the corn.



During World War I, school children were needed to help produce food. Millions answered the nation's call to service, especially children in California, and joined the United States School Garden Army. A colorful poster drive was established by the government. The young "soldiers of the soil" helped grow food for the nation while the men were at war.

Again during World War II, families were asked to grow "Victory Gardens" to help feed the nation. In England, groups of women called "Land Girls" provided much of the farm labor during the war.

This poster of a boy wearing a newspaper cap was designed to encourage American boys to develop their business skills by raising produce for the United States Garden Army.

(Sources: Haywood, John, Editor, Work, Trade and Farming Through the Ages, USDA History)



Raised 'em myself in my U.S. School Garden

Ing - Arg you diggin St Design and Dress The Three Sisters





Write an acrostic poem using the subject and title "GARDEN." Be sure and write your poem in cursive.

G

A

D

E

R

Ν

Share your poem with the class.

**Standards:** ELA - Grade 3 – Reading 1.3, 2.7 Writing 1.2 LS 1.9; Grade 4 – Reading 1.1 Writing 1.4; LS 2.4

## Dictyouknows

The first plants in the world to be domesticated were barley (Middle East) and rice (China, India and Southeast Asia) in about 5000 B.C. Corn, beans and squash (Mexico) and potatoes, sweet potatoes and corn (Andes) followed in about 3000 B.C. Gardens Today

Today's gardens can be grown nearly anywhere! Apartment dwellers have container gardens – even tin cans can be used. Fruits and vegetables can be grown in terra cotta pots, in raised beds, in plots and even in water (hydroponic planting). Many communities provide areas for community gardening. If you have an empty plot near you, why not think about asking the owner if you can plant a few seeds there? Schools throughout California are involved with gardening as well. Do you have a garden in your school? What do you grow? Are there other plants that you might grow?

(Sources: National Gardening Association; Schoolyard Mosaics; California School Garden Network - www.csgn.org)



Create a scale (1 cm = 1 foot). Use a ruler and show all your work.

Draw or glue samples onto a piece of paper,

diagramming and labeling plants and garden features

(pond, bench, sand boxes, worm bins, etc.).

**Standards:** ELA – **Grade 3** – Reading 2.7; **Grade 4** – Reading 2.2; Math **Grade 3** – NS 1.1, 2.1 AF 1.1 Measurement and Geometry (MG) 1.3, 1.4 MR -, 2.4; **Grade 4** – MG 1.1 1.4, MR 1.0, 2.4; **Grade 5** – MG 1.4 MG 2.1, 2.3 MR 1.0, 2.4; **Grade 6** – AF 2.1 MR1.1, 1.3; **Grade 7** – MG 1.2, 2.1, 2.6; MR 1.1, 1.3, 2.5; Visual Arts – **Grade 4** – CRA 5.3; **Grade 5** – CRA 5.1, 5.2 CE 2.5



Cucumber

Bananas

Ham

Dictory

Did vou know that a

worm can eat its weight

in food each day!

Hamburger

**Cooking Oil** 

Trout

**Beans** 

Pears

Lettuce

Egg shells

Hot dog

except for dairy, meats or oils can

Use a glass-sided aquarium to

![](_page_12_Picture_5.jpeg)

1. Recycle and reuse newspaper by shredding newspaper and adding to the **compost**. Record your observation in a journal. Use complete sentences and paragraphs, and write in cursive.

Standards: ELA - Grade 3 - Reading 2.7; ELA - Grade 3 - Writing 1.1, 1.2; WOELC 1.1; Grade 4 – Writing 1.4; WOELC 1.1; Grade 5 - WOELC 1.4; Grade 6 - WOELC 1.1, 1.4; Grade 7- WOELC 1.4; Grade 8 - WOELC 1.5

2. Write a "help wanted" ad from the viewpoint of a worm. Read the classified section of a newspaper to get ideas. Use complete sentences and write in paragraph form.

Standards: ELA - Grade 3 - Reading 2.7; ELA - Grade 3 - Writing Strategies 1.0 WOELC 1.1; Grade 4 - Writing 1.1 WOELC 1.1; Grade 5 - WOELC 1.4; Grade 6 - WOELC 1.1, 1.4; Grade 7 - WOELC 1.6; Grade 8 - WOELC 1.1, 1.5

# Best Ever Household Compost Recipell

Composting is like baking a cake. Simply add the ingredients, stir, "bake" and out comes compost!!

Whether you compost kitchen waste or yard and garden waste, there are a few basic steps to follow. Here are the necessary ingredients and general directions for composting.

#### **Kitchen Compost**

Add a mixture of some or all of these household ingredients:

vegetable peels and seeds eggshells, fruit peels, and nutshells coffee grounds and filters

other vegetable or fruit scraps

#### **Directions:**

Choose a "pot" for baking your compost. Any type of composting bin will do.

Place kitchen and yard waste in the composting bin.

Spread soil or "already done" compost over the compost pile. This layer contains microorganisms and soil animals that do the work of making the compost. It also helps keep the surface from drying out.

Adjust the moisture in your compost pile. Add straw or sawdust to soggy materials, or add water to a pile that is too dry.

Allow the pile to "bake" outside. It should heat quickly and reach the desired temperature (90 to 140 degrees Fahrenheit, or 32 to 60 degrees Celsius) in four to five days.

Stir your compost as it bakes if you want to speed the baking time.

The pile will settle down from its original height. This is a good sign the compost is baking properly.

If you mix or turn your compost pile every week, it should be "done," or ready in one to two months. If you don't turn, the compost should be ready in six to 12 months.

Your "best ever" compost should look like dark crumbly soil mixed with small pieces of organic material. It should have a sweet, earthy smell.

Feed compost to hungry plants by mixing it with the soil. (Source: California Department of Food and Agriculture)

# one seed, two seeds, three seeds or more?

# Didyouknow?

....Pomegranates are not only delicious and beautiful, they're also one of the most nutritious fruits you can eat. They're high in vitamin C, high in potassium, an excellent source of fiber and low in calories!

> (Source: www. pomegranates.org)

![](_page_13_Picture_4.jpeg)

#### What you will need:

l pomegranate, an old newspaper, an old shirt or smock, 5-10 small jars, sandwich baggies, potting soil mix, and water.

#### What to do:

Put on the old shirt (to protect your clothes from pomegranate juice). Cut the pomegranate in half. Take out about 10 seeds. Place them on the newspaper. Scrub the seeds with the newspaper to remove any fruit on top. Fill the jars with potting soil. Place 1 or 2 seeds in the **soil** and then cover with another 1/2 inch of **soil**. Put a sandwich bag over the container tops. Place the containers in a warm, bright place. Keep the soil damp.

#### What will happen?

In five to seven weeks you will see leaves coming out of the soil. Remove the bags from the jar. Be sure to keep the soil damp, but not too wet at all times. If you take good care of your plants they will grow quite large and you will want to move them into larger containers. After several years of growth you may get fruit!

![](_page_13_Picture_11.jpeg)

![](_page_13_Picture_12.jpeg)

Agricultural producers interact with banks, utilize computers to manage their finances and work with companies to borrow money to pay their **expenses**. Use the **spreadsheet** to

find out if you have enough money to start up your own one-acre **orchard**. You have \$3,600 in savings. Will you need to borrow money from the bank? Show and check your work. If you do have to borrow the money from a banker, write a letter asking for a loan, include your **spreadsheet** to show your financial needs.

	Items needed to start up your pomegranate orchard:	Cost:
1	One acre of land	\$2,000
2	Water and labor	\$250
3	Trees (134 per acre) @ \$5 each	\$670
4	Weed management	\$300
5	Fertilizer	\$125
6	ATV costs	\$225
7	Harvest	\$800

**Standards:** ELA **Grade 3** – Reading 2.7, **Grade 4** – Reading 2.2; Math - **Grade 3** – NS 1.1, 2.1 3.3 AF 1.1, 1.2, 2.1, MR 1.0, 2.4, 2.6, **Grade 4** – NS 2.1, 3., MR 1.0, 2.4, 2.6, **Grade 5** – MR 1.0, 2.4), 2.6, **Grade 6** – MR 1.1, 1.3, 2.5, 2.7, **Grade 7** – MR 1.1, 1.3, 2.6, 2.8

![](_page_13_Picture_17.jpeg)

A pomegranate grower has an orchard he would like to plant. The **orchard** is 436 ft. long and 100 feet wide. The grower wants to know what the surface area of the orchard is in square feet? What is the **perimeter** of the **orchard** in feet? If he plants his pomegranate trees 20 ft. apart from one another, how many trees will he have to purchase to fill his **orchard**?

**Standards:** ELA - Grade 3 – Reading 2.7, Grade 4 – Reading 2.2; Math - Grade 3 – NS 1.1, 2.1 AF 1.1, 1.2, 2.1 MG 1.3 MR 1.0, Grade 4 – NS 3.1 MG 1.1, 1.4 MR 1.0, Grade 5 – AF 1.1 MG 1.4 MR 1.0, Grade 6 – MR 1.1, 1.3; Grade 7 – MG 1.2, 2.0 MR 1.1, 1.3

![](_page_13_Picture_20.jpeg)

Many farming companies are owned by various family members. These family members may own **shares** of **stock** in the family's farming business. After reading the word problem below, find the correct answer to each of the questions. Show your work. Check your work.

The Smith Pomegranate Company is worth \$2000 based upon the value of all its **shares** of **stock**. Currently, there are 4000 **shares** of **stock**.

- A. What is the value of each **stock**?
- B. Uncle Bob owns 1/4 of the stock. How many shares does he own?
- C. What is the value of Uncle Bob's stock?

(Check your answers on www.kids.cfaitc.org/wgo5/pomegranate.)

![](_page_14_Picture_0.jpeg)

**Acre** - A measure of land, 43,560 sq. ft.

**Antioxidant** - A substance, such as Vitamin E, Vitamin C, or beta carotene, thought to protect body cells from the damaging effects of oxidation.

**ATV** - Abbreviation for All Terrain Vehicle - A small, open motor vehicle having one seat and three or more wheels fitted with large tires. It is designed chiefly for recreational use over roadless, rugged terrain.

**Beef cuts** - To separate from a main body; detached from the main carcass of an animal.

**Beta Carotene** - The isomeric form of carotene that is widely distributed in nature and most efficiently converted to Vitamin A by the body.

**Big Wheel** - Large wooden-spoked wheels, sometimes 10-feet or more in diameter, used to move logs in premechanized days.

**Biotech** - The use of microorganisms, such as bacteria or yeasts, or biological substances, such as enzymes, to perform specific industrial or manufacturing processes.

**By-product** - A part of a commodity used for something other than the commodity's primary purpose.

**Climate** - Average weather conditions of a certain region.

**Companion planting** - The cultivation of certain kinds of plants together in the same area, especially

![](_page_14_Picture_11.jpeg)

Choose five words from the glossary. Write the words on numbered lines below. Then find each word in the dictionary. After you find a word, write the guide words for that page on the lines.

if one species will benefit from another, such as planting an insectrepellent plant in a vegetable garden.

**Compost** - A mixture of decaying organic matter, as from leaves and manure, used to improve soil structure and provide nutrients.

**Cruciferous vegetable** – Only vegetable that contain sulforaphane, indole-carbinol and D-limonene, which support enzyme activity linked to normal cell growth and renewal and help bodies fight cancer.

**Decomposition** - The separation of a chemical substance into simpler chemical substances and especially the elements of which it is made up. The breakdown of plant or animal matter.

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

**Expenses** - An expenditure of money; a cost.

**Feller Buncher** - A self-propelled machine used to harvest trees, cutting them near the ground and moving them to a site for loading. Some machines remove all limbs from the logs.

**Forest** - A dense growth of trees, plants, and underbrush covering a large area.

**Forester** - One who is trained in forestry.

**Fresh tomatoes** - The fruit is grown market ready and usually harvested by hand.

**Hide** - The outer skin and hair of cattle.

**Horsepower** - A unit of power in the U.S. Customary System, equal to 745.7 watts or 33,000 foot-pounds per minute. The power exerted by a horse in pulling.

**Hydroponic planting** - The use of water as a growing medium for plants.

**Misery Whip** - A hand-powered crosscut saw (both single- and double-handled) used to harvest trees and cut them to length in the days before power saws.

**Lycopene** - Red carotenoid pigment, C40H56, found chiefly in blood, the reproductive organs, tomatoes, and palm oils.

**Orchard** - An area of land devoted to the cultivation of fruit or nut trees.

**Pathogen** - A germ (as a bacterium or virus) that causes disease.

Perimeter - The outer limits of an area.

**Processing tomatoes** - The fruit is grown and treated for use in sauces, catsup, salsa and other food products. They are generally picked by machine.

**Rancheros** - Spanish term for ranchers.

**Redworms** - Worms that are suited for composting. They are also known as earthworms.

**Renewable resource** – Something that can replenish itself over time.

**Shares** - a portion belonging to, due to, or contributed by an individual or group.

**Soil** - The surface layer of the earth supporting plant life.

**South American Andes** - A mountain system more than 5,000 miles long located in South America.

**Spreadsheet** - A piece of paper with rows and columns for recording financial data for use in comparative analysis.

**Stock** - money or capital invested or available for investment or trading.

**Tallow** - Hard fat obtained from parts of the bodies of cattle, sheep, or horses, and used in foodstuffs or to make candles, leather dressing, soap, and lubricants.

Terrain - An area of land; ground.

**Tomatils** - What tomatoes are known as in Mexico.

**Vaqueros** - Spanish term for cowboys.

**Vericomposting** - A method of composting using earthworms to turn fruit and vegetables and other kitchen waste into compost.

**Wilderness Area** - An unsettled, uncultivated region left in its natural condition, especially a large wild tract of land covered with dense vegetation or forests.

**Yields** - To bear or bring forth as a natural product especially as a result of cultivation. To produce or furnish as return.

![](_page_14_Picture_48.jpeg)

4-H ATV Safety Program www.atv-youth.org

California Beef Council www.calbeef.org

California Cantaloupe www.cfaitc.org/Commodity/pdf/ Cantaloupes.pdf

> California Cling Peach www.calclingpeach.com

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

California Dried Plums www.californiadriedplums.org

California Forest Products Commission www.calforests.org

California Foundation for Agriculture in the Classroom www.cfaitc.org

> California Integrated Waste Management Board www.ciwmb.ca.gov

California Pear Advisory Board www.calpear.com

California Pomegranate Council www.pomegranates.org

California Raisin Marketing Board www.calraisins.org

California Tomato Growers Association www.ctga.org

> Kids Gardening www.kidsgardening.com

Table Grapes www.cfaitc.org/Commodity/pdf/ TableGrapes.pdf

The Forest Foundation www.calforestfoundation.org

United States Department of Agriculture www.usda.gov

> USDA Forest Service www.fs.fed.us

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

\*\*\*\*

Glossary Words 1	Guide Words
2	
3	
4	
5	
Standards: ELA - Grade 3 – Reading 2.7, Writ	ing 1.3; Grade 4 – Reading 2.2

It takes approximately 40 work days to pay for your food for a year. It takes 100 days to pay taxes.

Agriculture employs more than 24 million American workers (17% of workforce) to produce, process, sell and trade the nation's food and fiber.

# adnama

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)

![](_page_15_Picture_10.jpeg)

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![](_page_15_Picture_13.jpeg)

California foresters plant an average of three new trees for every one harvested. For at least 25 years, growth has exceeded harvest in California forests.

A cow's nose print is as unique as a human's fingerprint. **California has** more forestland than any state except Alaska. **Forests cover** over one-third of California.

![](_page_15_Picture_18.jpeg)

![](_page_15_Picture_19.jpeg)

CALIFORNIA Allied **Nationwide** Health Plans FARM BUREAU Insurance a Nationwide® company On Your Side" FEDERATION On Your Side **Bank of America Nationwide**<sup>®</sup> On Your Side" **California Beef Council** The Forest WELLS **California Milk** FARGO Foundation **Advisory Board** James G. Boswell Foundation CALIFORNIA Farm Credit TEACHERS **Bob and Sue Johnson** ASSOCIATION You invest in the land. We invest in you. **Olson Foundation** American AgCredit Rabobank Farm Credit West Warne Family Fresno Madera Farm Credit **P&H CREATIVE GROUP Charitable Foundation** Northern California Farm Credit Sacramento Valley Farm Credit

![](_page_15_Picture_21.jpeg)

The Bertha and John Garabedian **Charitable Foundation** 

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![](_page_15_Picture_24.jpeg)

![](_page_15_Picture_25.jpeg)