

Cream *of the* Crop

A Harvest of Ideas for Educators

Vol. 18, No. 2

Spring, 2005

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Resources!



California Foundation for Agriculture in the Classroom

Education and Agriculture

Making connections, gaining support for learning

W By Dan Desmond
e all know that teachers work double-time to provide students with the best possible education, many times against extreme barriers. In California incorporating agriculture in the classroom brings new resources, an exciting framework for learning, and a proven strategy to enhance academic performance, improve child nutrition and strengthen ecological literacy.

Society relies on the professional education community to find solutions to the challenges that plague so many American youth. Teachers and school administrators are called upon to motivate and educate children, address a growing list of special needs, and raise funds to support the school, while leaving no child behind. Despite these insurmountable expectations, teachers remain dedicated to making a dif-

ference in the life of each child. But finding ways to connect with each child is not easy. Teachers and school administrators, with the support of parents and local communities, need to identify a common thread that can provide an effective context for learning.

For a growing number of educators, that thread comes through the food we eat and the fibers we wear. Food plays a central role in each of our lives and its impact is seen at the social, emotional, physical and intellectual levels. Kids understand the role of food in their family,

See Education..., p. 4



At Louisiana Schnell School in Placerville, Dee Desmond's students research a commodity and report on it, dressed appropriately, at Open House. See page 4 for other ways Dee blends agriculture into her classroom all year long.

The Teacher

Resource

Guide is a

"must have"

for educators

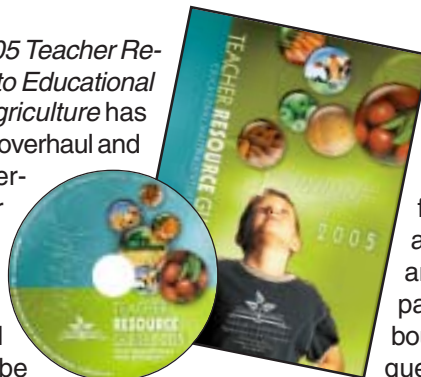
and youth

leaders.

Order your new Teacher Resource Guide now!

The popular 2005 *Teacher Resource Guide to Educational Materials About Agriculture* has received its annual overhaul and is ready, with numerous new entries, for delivery!

Educators and youth leaders who support agricultural awareness describe



this free guide as a must-have.

The guide comes in two formats: interactive CD (PC and Mac compatible) or soft-bound book. Request a copy by

returning the postcard inserted in this newsletter; submitting an electronic request found on the front page of www.cfaitc.org; sending an e-mail, with shipping address, to cfaitc@cfbf.com; or phoning 800/700-AITC. **Specify book or CD when ordering.**

The interactive version of the guide will be available in April on the Web site listed above. 🌱

Take a fun break during springtime; easy activities link ag to young lives

The delightful nature of springtime can be overshadowed by restraints imposed upon classrooms by test preparation and schedules. Don't forget that it's important to take a break now and then! The ideas, below, are simple enough to tackle in a short time simply for fun or can be extended into broader learning experiences. Either way, they'll help students relate to how agriculture touches their lives every day.

Create Biodegradable Plastic from Corn!

Supplies needed

Cornstarch Corn oil
Water Food coloring
Medicine dropper Microwave oven
Measuring spoons
Sandwich-size Ziploc® bags or paper cups



Directions

Place a tablespoon of cornstarch in a paper cup or Ziploc® bag.

Add 2 drops of corn oil and 1 tablespoon of water to the cornstarch. Stir the mixture.

Mix in 2 drops of your favorite food coloring and stir well.

Stop for Some

Scientific Observations

What do you notice about your biodegradable plastic?

Is your biodegradable plastic the same as the other students' plastic?

What could you make with this biodegradable plastic if you let it harden?

Microwave your biodegradable plastic for 20-25 seconds on high.

Questions

◆ Write in paragraph form what happens to your plastic after microwaving it.

◆ Form your plastic into a ball. Describe in paragraph form what your plastic will do.

◆ What products can you think of that are made from a similar plastic?

Idea provided by Illinois Farm Bureau's Ag in the Classroom "Ag, Ziplocs & You: 10 Plastic Bag Activities for Kids." Download the document from www.agintheclassroom.org/resources/PlasticsFlyer.pdf.

Corny tidbits: Plastic can be made from corn, which is renewable, instead of petroleum oil, which is non-renewable. Items made, in part or whole, from corn oil include shopping and trash bags, golf tees, styrofoam cups and packing peanuts. Would you also believe shoelaces and film are made with cornstarch? Corn syrup sweetens soft drinks? Corn ethanol even powers some vehicles. Corn is everywhere!

Dairy details: Milk and cream together are California's number one commodity. That's because there are an estimated 1.69 million cows in the state. One dairy cow produces six to seven gallons of milk a day, which is over 2,000 gallons of milk each year. That's enough for 42 people each to have three six ounce glasses of milk every day for a year. Visit www.agday.org/tc/tc-funfacts.html to find more fun facts on corn and milk. 🌽

Make Ice Cream in a Can

Supplies needed for every three cups of ice cream

1 cup milk	1 1-pound coffee can, with tight-fitting lid	Duct tape
1 cup whipping cream	1 3-pound coffee can, with tight-fitting lid	Crushed ice
1/2 cup sugar		1 cup rock salt
1/2 teaspoon vanilla		Rubber spatula

Directions

Put the first four ingredients in the 1-pound can. Top with the lid, and secure with duct tape. Place this can inside the 3-pound can. Fill the open space with crushed ice. Pour at least 1/2 cup of rock salt over the ice.

Place the lid on the large can. Roll it back and forth on a table for 10 minutes. Open the outer can, lift out the smaller, wipe it off and remove the tape and lid.

Using a rubber spatula, stir the mixture. If not solid, repack the smaller can in the large container with ice and rock salt as directed above. Roll back and forth for five minutes more. Serve immediately. Makes about three cups.

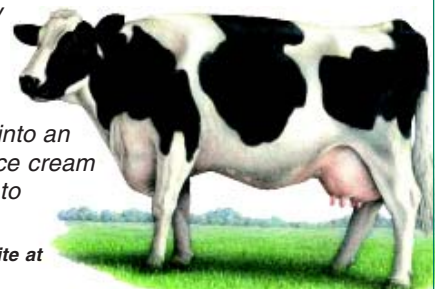
Questions

◆ What happens if you freeze the food ingredients without mixing them? *The ingredients would freeze into one solid block.*

◆ How does rolling or churning help make ice cream? *Milk particles are surrounded by globules of fat. These globules must be broken apart so the sugar and vanilla can mix in. The churning allows the particles to mix as they freeze, creating a texture that can be scooped.*

◆ Why is salt added to the ice? *Ice cream freezes at -3° C (27° F), but ice starts to melt at 0° C (32° F). If the tub held just ice, it would melt into an ice-water mixture, which is not cold enough for ice cream to freeze. Salt lowers the freezing point of water to -5° C (23° F) – cold enough to freeze ice cream!*

Download this idea in its entirety from the CFAITC Web site at <http://kids.cfaitc.org/recipes.php>.



New dietary guidelines serve up changes

The Food Pyramid, a staple of nutrition education for 12 years, is taking a sabbatical of sorts while it faces certain reconstruction in the coming months.

This winter, the United States Department of Agriculture (USDA) and Health

and Human Services (HHS) jointly announced new dietary guidelines for Americans over the age of two.

The familiar Food Pyramid has served as a visual reminder of the guideline's recommendations for 12 years now. Though

guidelines are updated every five years, this is the first time since the pyramid's formation that it faces a facelift. The results could be drastic; some suggest that with leaner recommendations, it may

See *New dietary guidelines...*, p. 6

Nutritional Value of Fresh Produce

Nutrients in Fresh Fruits and Vegetables

	Serving Size	Percent of USRDA Vitamin A	Percent of USRDA Vitamin C	
Fruits	Apples	*	6	
	Bananas	*	15	
	Cantaloupe	1/4 medium	55	90
	Grapes	1 - 1 1/2 cups	3	9
	Oranges	1 medium	*	120
	Peaches	2 medium	20	20
	Watermelon	1/8 medium	8	25
Vegetables	Broccoli	1 medium stalk	10	240
	Carrots	1 medium	330	8
	Corn	1 ear	5	10
	Green Beans	3/4 cup	2	8
	Head Lettuce	1/6 head	2	4
	Onions	1 medium	*	20
	Tomatoes	1 medium	29	49

Background Information

The vitamin content in fruits and vegetables is reported as a percentage of the United States Recommended Daily Allowance (USRDA). Such a standard makes nutrient comparisons of foods possible. To maintain good health, it is important to be aware of nutrient values and to consume foods daily that provide 100% of the USRDA. This activity shows students how to compare nutritional values using vitamins A and C as examples.

Procedure

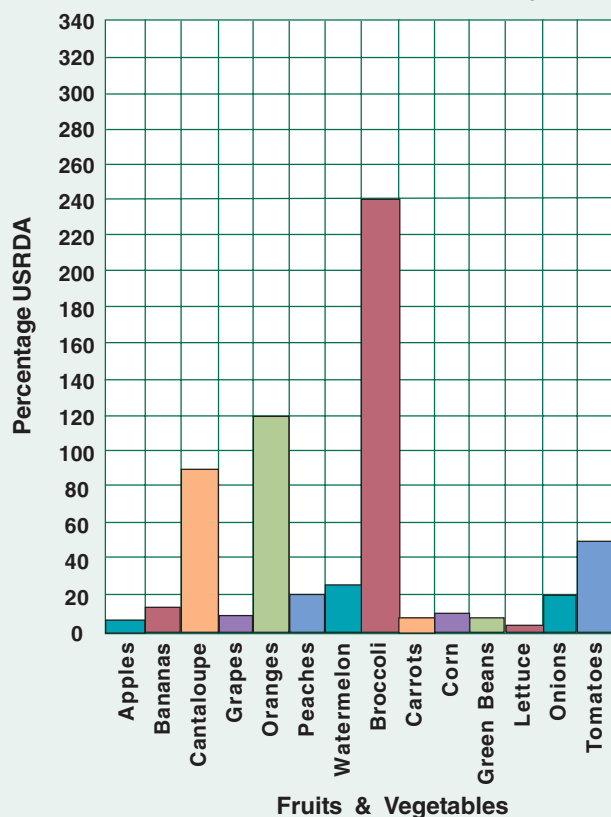
1. Discuss the importance of eating healthfully. Starting good habits at an early age can have a long-term positive effect on health. Explain that nutrients, found in varying quantities in a variety of foods, are substances required by living things for good health. For people, more than 50 substances must be consumed in adequate quantities to meet the

body's needs. Two specific nutrients are Vitamin A and Vitamin C.

- Discuss how Vitamin A is essential for healthy body tissue and growing bones, and that it helps with night vision. Vitamin C is essential for strong gums and healthy tissues.
- Share the information from the "Nutrients in Fresh Fruits and Vegetables" chart. Review it to ensure students understand the information that is presented.
- Review with students how to make bar graphs. Using a chart similar to the one at right, ask the students to label the vertical axis, the horizontal axis, create a title, and complete the bar graph using data from "Nutrients in Fresh Fruits and Vegetables."
- Ask students to answer the following questions:
 - Which fruit and vegetable contain the highest percentage of USRDA of Vitamin A? Of Vitamin C? Which contain the lowest?
 - Find two fruits and two vegetables that are high in both Vitamin A and Vitamin C.
 - Which way is easier for you to compare nutritional values of the fruits and vegetables – the chart or graphs? Explain why.
 - From the nutrient information provided, nominate one fruit or vegetable to be the "Best Produce" award winner. What fruit or vegetable did you choose? Tell why.
 - Why is it important to eat a variety of fruits and vegetables?
- Research and compare nutrient values of other foods.

Find the complete lesson, "Nutritional Value of Fresh Produce," at www.cfaitec.org under Lesson Plans – Grades 4-6: Fruits and Vegetables for Health.

Title of Graph *Vitamin C in Fruits and Vegetables*



Agricultural Facts

Did you know...

The average American consumes 8 pounds of **grapes**, 6.6 pounds of **strawberries**, and 1.3 pounds of **asparagus** every year. (California Country, Sept/Oct, 2004; Nov/Dec, 2004)



Forty percent of the world's **almond** supply is used by candy manufacturers. (California Country, Jan/Feb, 2005)

Of the yearly revenue **cut flower** growers and florists receive, 36 percent comes from sales centered on just one day: Valentine's Day. That's when consumers snap up nearly 175 million stems of roses! (Ag Alert, Feb 16, 2005)

The National Restaurant Association keeps track of what we eat! It says salads as main courses have grown in popularity more than other items in full-service *and* fast food spots. Start looking for more salads on menus! (Food & Farm News, Jan. 5, 2005)

Oranges bruise easily when wet, so during harvest, if the weather turns to rain, it can take up to three days for them to dry out enough for harvest to start up again. (Food & Farm News, Jan. 4, 2005)



The U.S. Department of Agriculture hires "Beagle Brigades" at 22 airports across the land. The dogs sniff out exotic pests that can harm our own food supply. That's incredibly helpful in detecting the more than 63,500 shipments of prohibited ag commodities inspectors intercept each year. (Food & Farm News, Jan. 3, 2005; California Country, Sept/Oct, 2004)

Education and Agriculture ...

Continued from page 1

they understand hunger in their community and world, but they frequently are so far removed from the food system that they don't see the important connections between food production and the actual meals that turn up in the school cafeteria or vending machines. Using food to connect us and agriculture to teach us provides a web of relations that has a powerful impact on students.

Using agriculture as an integrating context for learning can be relatively simple, thanks to resources such as the California Foundation for Agriculture in the Classroom, Food Land and People, State Department of Education, Center for Ecoliteracy, Hansen Agricultural Learning Center, Life Lab Science Program and Center for Land Based Learning. If you look at how teachers incorporate food and agriculture as an instructional strategy, the range of involvement stretches across the curriculum and into the community. To get a sense on how this plays out in the classroom, look at the multi-age (3-5) classroom, taught by Dee Desmond, at Louisiana Schnell School in Placerville (see box, left). These activities highlight what can be included in thematic instruction based on the food cycle. The series of activities provides a thread connecting the learners to something that is meaningful at every level in their daily lives. In research that has evaluated the impact of such programs, there is evidence that they can improve academic achievement, change dietary habits, thus improving nutrition, increase ecological literacy, and build a sense of community at the school.

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Look what's happening at Louisiana Schnell

Year 'Round

Weekly garden lessons, led by parents, involve a variety of plants and garden topics (Garden of Learning curriculum).

Fall

Students enter *Imagine this...* writing contest (www.cfaitc.org).

Winter

◆ Students write, illustrate and publish stories about agriculture using the Student Treasures program (www.studenttreasures.com).

◆ A holiday project raises funds for Heifer Project International to provide support to food projects in Latin America. (No gifts for teacher.) Garden lessons focus on hunger and food issues worldwide.

◆ Students harvest wheat (planted by students in the spring), mill it, and make bread.

Spring

◆ Students research and "become" (home-made costumes) a food product, then present during Open House. Students also sell garden products at the "Schnell School Farmers Market," a fund-raiser so successful that local farmers supplement the produce to meet demand. (Coordinated by Garden of Learning as a school-wide project.)

◆ Students participate in Farm Bureau's Agricultural Education Day.

Spring/Summer

Students plant wheat in planter boxes outside their class windows. (Seeds and curriculum provided by California Wheat Commission.)

Schnell School in Placerville (see box, left). These activities highlight what can be included in thematic instruction based on the food cycle. The series of activities provides a thread connecting the learners to something that is meaningful at every level in their daily lives. In research that has evaluated the impact of such programs, there is evidence that they can improve academic achievement, change dietary habits, thus improving nutrition, increase ecological literacy, and build a sense of community at the school.

In today's social environment, the focus on food has taken on new importance as the crisis in childhood nutrition appears on the front pages of national media. It is impossible to miss the headlines: 15 percent of our children are overweight, more than 60 percent eat too much fat and miss, by a wide margin, the recommended daily servings of fruits and vegetables. This, in the state with the greatest production of fresh fruits and vegetables in the nation.

Incorporating agriculture into the classroom won't cure all social problems, but it can contribute to a deeper understanding of our food system and how we can manage that system for a healthy lifestyle.

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Resources inspire explorations into agriculture

The Bookshelf



■ **FoodAlert! The Ultimate Sourcebook for Food Safety** (High School - Adult) General readers will be able to understand the often complex causes, dangers and prevention of food-borne diseases. Includes tips on handling, preparing, buying and storing food, eating out, and more. \$14.95 paperback. ISBN 0816039364 Morton Satin, Checkmark Books, 1999.

■ **The Olive in California** (Adult) Presents the history and mythology of the olive tree, one of California's first agricultural commodities. Has something to offer both history buffs and food lovers. Photos, charts, and graphics illustrate the information. \$32.50 hardcover. ISBN 1580081312 Judith M. Taylor, M.D., Ten Speed Press, 2000.

■ **Aliens from Earth: When Animals and Plants Invade Other Ecosystems** (2-5) Beautifully illustrated picture book introduces serious environmental problems caused by invasive plant and animal species. 13-page teacher's guide available at www.peachtree-online.com/Kids/TeachersGuide.html. \$15.95 hardcover. ISBN 156145236X Mary Batten, Peachtree Publishers, 2003.



■ **Ice Cream** (K-8) Graphically delightful book offers history and fun facts related to ice cream in comic cartoons and lively language. Fun for all ages. \$6.95 paperback. ISBN 0881061123 Jules Older, Charlesbridge Publishing, 2002.

■ **Brown Foods, Orange Foods, White Foods, Green Foods, and Red Foods** (Pre-K-2) Part of the *Colors We Eat* series, these five books are filled with bright photos and minimal text that present various foods in each color, sparking good classroom conversation. \$5.25 each, paperback. ISBN 1403438404 (Brown), 1403438412 (Orange), 1588107469 (White), 1588107434 (Green), and 1588107442 (Red). Patricia Whitehouse, Heinemann Library, 2003 & 2004.

■ **Food Biotechnology: A Communications Guide to Improving Understanding** (10-Adult) Informative resource addresses the growing confusion over foods produced using biotechnology. Binder includes summary of key issues, scientific and consumer attitude data, more. \$19.95. International Food Information Council, ATTN: Communications Guide, 1100 Connecticut Ave, NW, Suite 430, Washington, D.C. 20036 Fax 202/296-6547 Download order form from <http://ific.org>



■ **Investigations in Horticulture: A Middle School Horticultural Curriculum** (6-8) 15 lessons/activities stress higher-order thinking strategies using horticulture as the theme. Includes teacher supplements, blackline masters, and connections to CA's Content Standards. Spiral bound, 104 pages. \$35. CA Assoc. of Nurseries and Garden Centers, 3947 Lennane Dr., Suite 150, Sacramento, CA 95834-1973 800/748-6214 Fax 916/567-0505 www.cangc.org

■ **Ag Experience** (K-12) Teaching kits offer materials and activities for hands-on lessons about agriculture. Sample topics: wool and spinning, cotton, corn and the Indians, wheat, more! Flyer available. Ag Experience, 3144 North G St., #125-141, Merced, CA 94340 209/384-9272 agexper@comcast.net

■ **Charlie Greenhand's Ag Trivia Challenge** (9-12) Players test their detailed knowledge in agriscience/technology, plant agriculture, animals, general ag/ag history, agribusiness; and FFA. For 4-12 players. \$49 plus s/h. National FFA Org., P.O. Box 68960, Indianapolis, IN 42678 888/332-2668 coreadvice@ffa.org www.ffaunlimited.org

■ **Finding Your Way to a Healthier You: Based on the Dietary Guidelines for Americans** (7-Adult) Brochure highlights how to make smart choices from each food group; helps find a balance between food and physical activity. Download from www.health.gov/dietaryguidelines/dga2005/document/pdf/brochure.pdf. For single print copies, call Federal Citizen Info Ctr. toll free at 888/878-3256. For bulk orders of 100/\$54, call U.S. Gov't. Printing Office toll free at 866/512-1800, stock #001-000-04718-3.



■ **Web sites worth exploring!** (Grades K-Adult) Explore these sites for info on:

History of American Agriculture: www.agclassroom.org/teacher/history/index.htm

Peanuts: www.peanutsusa.com

Poultry: www.cpif.org

Roses: www.rosesinc.org/ICFG/For_Consumers/default.asp

Science Fair Projects: www.all-science-fair-projects.com

Smithsonian National Zoo's Virtual Farm: nationalzoo.si.edu/animals/kidsfarm

Trout Farming: www.ustfa.org

Water: watereducation.org

Water: www.cfwc.com

Weather: www.skyeyeweather.com



New! From the Foundation

■ **2005 Teacher Resource Guide** Newly updated guide filled with ag lit resources is available in book and interactive CD formats. Specify preferred format; allow 2-4 weeks for delivery. Free. Interactive format available on CFAITC Web site in April, 2005.

■ **Food Safety: From Farm to Fork** Students learn, through real-life examples and hands-on activities, that everyone is responsible for minimizing foodborne illnesses. This language arts and science-based unit is aligned to the Content Standards for CA Public Schools. Free, while supplies last, and downloadable.

■ **Farming is Food, Fiber, Flowers... and Fun!** Workbook walks through planning and implementation of establishing or enhancing a garden project. Formatted for placement in a binder, many of the pages can be used as templates. Free online.

■ **What's Growin' On?** This year's popular Newspapers in Education supplement focuses on the many ways agriculture touches students' lives. Available in March through selected NIE programs and from the Foundation, while supplies last. Free.

■ **AITC E-newsletter** Receive monthly notices of ag literacy activities, events and resources. Start a free subscription by sending an e-mail with "Request to subscribe to e-news" in subject line to cfaite@cfbf.com. To order above resources, contact CFAITC, 2300 River Plaza Drive, Sacramento, CA 95833-3293 800/700-AITC Fax: 916/561-5697 e-mail: cfaite@cfbf.com www.cfaite.org

New dietary guidelines set in '05

Continued from p. 3

surface with an entirely new shape!

Whatever the form, the message conveyed will be that Americans should reduce calorie consumption and increase physical activity in the following ways:

➤ **Fresh fruits and vegetables:** Increase intake of fresh fruits and vegetables to two cups of fruit and two and a half cups of vegetables every day.

➤ **Fats and sugars:** Decrease fats and sugar intake to two to three servings a week for fats and oils, five for sweets.

➤ **Whole grains:** Choose whole grains over processed, with at least half of the three one-ounce servings of grain coming from whole grain.

➤ **Dairy:** Consume three cups per day of fat-free or low-fat milk or milk products.

➤ **Physical Activity:** Get up and exercise at least 30 minutes most days of the week. Addressing sedentary lifestyles is a new twist to the guidelines. It's not just about healthy eating anymore!

An overall change involves defining "serving," a previously-used term that was too elusive. Most servings are now tangibly measured as a cup.

Exposure to the new guidelines and pyramid, when available, can be a great complement to ag literacy. The "Nutritional Value of Fresh Produce" lesson, page 3, introduces students to concepts supporting healthful eating such as learning what makes one food a good choice and another a poor one, learning to analyze nutrition labels, and recognizing the many benefits of fresh foods.

Resources on nutrition are plentiful. The *Teacher Resource Guide* (see page 1) contains many nutrition education listings. Nutrition labels for hundreds of foods can be found at www.food-stats.com. The "Finding Your Way to a Healthier You" Web site shares the updated dietary guidelines (see page 5). A research-oriented site for older students is www.ers.usda.gov/Data/FoodConsumption. Or, younger students can explore www.nutritionforkids.com.

Calendar

National Poetry Month

April: Incorporate an ag theme into a celebration of poetry.

National Garden Week

April 10-16: Plan a celebration featuring the school's garden... or hold a contest among students to gather ideas for plotting out next year's new "outdoor classroom."

National Arbor Day

April 29: Recognize the importance of trees to our lives and explore how they fit into agriculture. Join NAD Foundation by April 15 and receive 10 free trees: www.arborday.org.

Water Awareness Month

May: Explore the role water plays in the history, evolution and present-day status of California. How has it affected agriculture? Urban growth? How do they affect each other?

National Rose Month

June: Floriculture and the cut flower industry are a BIG part of California agriculture.

National AITC Conference

June 8-11, Indianapolis: "Realizing Agriculture Connects with Education." Details at www.agclassroom.org.

National Ice Cream Day

July 17: Celebrate in class by making homemade ice cream. Find directions on page 2.

American Horticultural Society Nat'l Children & Youth Garden Symposium

July 28-30, Atlanta, GA; Details at www.ahs.org/youth_gardening/national_youth_garden_symposium.htm.

Sneak Some Zucchini Onto Your Neighbors' Porch Night

Aug. 8: Before it takes over the garden and climbs through the classroom window, give some zucchini to a friend!

Kids' Day at the CA State Fair

Aug. 16: Kids 12 and under free. Ag activities all day!

California AITC Conference

Oct. 20-22, Sacramento: Workshops, make'n'takes and field trips present top-notch ideas for classroom use. Save the date! Details this spring on www.cfaic.org.



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California Agriculture in
the Classroom Conference

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2005
October 20-22
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Cream of the Crop



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