

Massachusetts Agriculture in the Classroom

Social Studies
Economics
Nutrition
Science



Workshops & Conferences

See details on Page 7.

Composting Workshop
Saturday, November 8, 2008
9 a.m. to 3 p.m.
South Hadley High School
Fee: \$30

Annual Massachusetts Agriculture Conference
Saturday, February 7, 2009
8:30 a.m. to 3:30 p.m.
Baird Middle School, Ludlow
Choice of 4-5 concurrent sessions
Fee: \$45 (\$40 until Dec. 1)

Maple Sugaring Workshop
Tuesday, February 17, 2009
9 a.m. to 3 p.m.
The Warren Farm & Sugarhouse,
North Brookfield, MA Fee: \$30

Feature Topic:

Buying Local

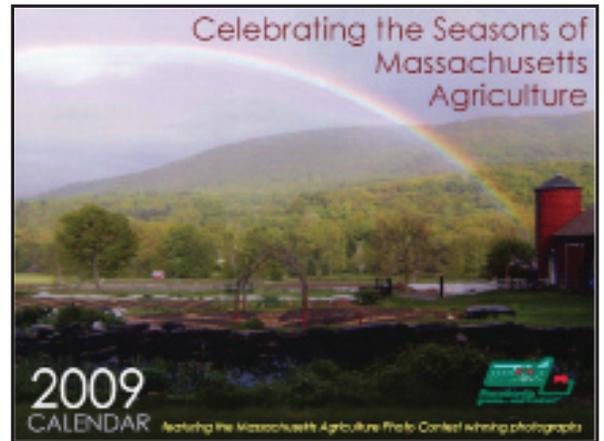


Mission: Massachusetts Agriculture in the Classroom is a non-profit 501 (c)(3) educational organization with the mission to foster an awareness and learning in all areas related to the food and agriculture industries and the economic and social importance of agriculture to the state, nation and the world.

Mini-Grant Information on page 2.

Mass. Agriculture Calendar Is Now Available

The 2009 Massachusetts Agriculture Calendar is now available for sale. Your purchase of this unique local calendar will show your enthusiasm for Massachusetts agriculture, and will also support the many educational efforts of Massachusetts Agriculture in the Classroom (MAC), the designated recipient of the proceeds. This attractive calendar will make a nice hostess or holiday gift for any friend or family member who has an interest in agriculture.



The Mass. Agriculture Calendar was a collaboration between the U.S.D.A. Natural Resources Conservation Service, Massachusetts Department of Agricultural Resources and MAC. It was created to educate consumers about the rich diversity of agriculture in the state, while at the same time providing an attractive color calendar that is a daily reminder of Massachusetts agriculture.

Each month of the calendar features one full-size photograph portraying a local farm or farm product in season. Photos were submitted by amateur photographers from across the state for our 2008 Mass. Agriculture Calendar Photo Contest. View the winning photos and check out the rules for taking and sending photographs to the 2009 Mass. Agriculture contest at www.mass.gov/agr/events.

The calendar also includes local agriculture facts, conservation facts, agriculture and horticulture related events and websites, as well as a chart showing the seasons of local crops. A poem written by the kindergarten class from the Sippican School in Marion, about one of the photographs in the 2008 calendar, is also included. Seven non-profit agricultural commodity organizations each sponsored a page in the calendar. They are the: Massachusetts Agricultural Fairs Association; Mass. Christmas Tree Association; Mass. Farm Bureau Federation; Mass. Flower Growers' Association; Mass. Fruit Growers Association; Mass. Maple Producers Association, and the Massachusetts State Grange.

Calendars may be purchased for \$10 each. A discount price of \$5 per calendar is available for orders of 5 calendars or more. All proceeds benefit MAC. Send a check payable to MAC with your name and address to: Calendar, MAC, P.O. Box 345, Seekonk, MA 02771.

Mini Grants

In April 2008, an **\$800 mini-grant** was awarded to **Susan Breines** and **Ceil Antes**, kindergarten teachers at the **Sunderland Elementary School**. Through the grant, they hope to raise awareness in all students about how food wastes can be used to improve soil quality for agricultural use. The kindergarten classes will start by composting kitchen and snack foods in worm bins and will visit local CSA farms to see how composting improves soil and food quality. The goal is to eventually compost all food wastes generated at the school, educating teachers, students and staff about recycling procedures and diverting waste foods to a local farm.

Another **\$800 mini-grant** was awarded to **Jeff Robbins**, history teacher at **Quabog Regional Middle School** in **Warren**. Through this project 125 eighth grade students will learn about and experience Massachusetts agriculture during various multi-disciplinary lessons, in all subjects relating to the apple orchard industry. The project will culminate with a trip to an apple orchard followed by cooking apples, preserving the fruit and producing a student driven cookbook.

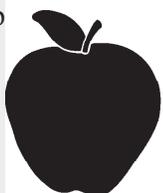
Any Massachusetts teacher or school can apply for a mini-grant to support their agricultural education efforts. Each year MAC awards **grants of up to \$1,500** to teachers for agricultural education projects. Mini-grants are due the first of April, September and November. To receive a copy of our mini-grant guidelines, send a letter or visit www.aginclassroom.org.

Educational Resources Available from MAC

School Gardens & Their
Community Partnership
Manual \$10

Farm Field Trip
Manual \$12

8 Lessons about
Agriculture & the
Environment Manual \$5



President's Message

This summer, MAC held **thirteen workshops** on farms across the state attended by **211 educators**. As part of a **Summer Graduate Course**, **fifteen teachers** each spent eight days on Massachusetts farms, and **Fitchburg State College** provided three graduate credits to each teacher. MAC is grateful to the **many farmers who opened their homes and places of business**, sharing their knowledge and passion about agriculture with so many teachers.

We were pleased to be able to host one of these summer educator workshops on our family dairy farm in Leicester. **The theme for our workshop was Buying Local**. We told the story of our farm and our family through three generations, while also showing the animals, the farm fields, the products that we make and the many connections to our local community. We also offered classroom activity ideas and showed how to make cheese and butter.

Many of the teachers who attend the summer workshops on the farm practice buying local. They like to show support of their own community. They also appreciate the learning experience derived from visiting a farm, farm stand, CSA or Farmers' Market regularly. They know that a student who eats well, exercises and gets a good nights sleep is more likely to succeed. Often teachers are willing to provide new tasting experiences in their classrooms. Some teachers even cook food to illustrate different textures, uses and cultures.

A farmer can be a great resource when teachers are preparing lessons about food and fiber. The connection through sales provides a few moments for the teacher to ask a question or two. The answers help them to connect the facts and concepts they have learned to the local community and then incorporate them into lesson plans. Explanations by the farmer assist in providing a fuller picture for their students. When local farmers form these connections with local teachers, everyone benefits.

*Marjorie Cooper
Co-President*

2008 Teacher of the Year Becky Bottomley



MAC is proud to announce that our **Teacher of the Year for 2008** is **Becky Bottomley**, who has been teaching Biology, Environmental Science and Horticulture at **Quabbin Regional High School** in **Barre** for the past ten years. In that time she has attended many MAC workshops, hosted a full-day greenhouse study course at her school and also taught soils and plant propagation for our winter conference. We have all been inspired by her enthusiasm for teaching and the knowledge she shares with others.

Becky grew up on a Connecticut farm with many farm animals, an orchard, corn fields, large vegetable garden and Christmas trees. She gained a lot of experience working in the family-owned farm supply business and garden center. Her love of plants and animals led her to major in Biology at the University of Connecticut, and then to teaching - first at Marlborough High School and later in Barre. Becky and her husband and three children now live in Hardwick, Mass. in a renovated 1830s farmhouse. They have raised cows, chickens, sheep, pigs and have large vegetable and flower gardens.

Becky integrates many hands-on activities into her classroom and also uses the school grounds as an outdoor classroom. Students landscape the school grounds and Quabbin Regional School District's Central Office and plant flowers on the Barre Common for Memorial Day. Becky also coaches the Quabbin Envirothon team, preparing them for this statewide environmental competition. Consistently Quabbin's team wins many awards. Becky also received the Secretary's Award for Excellence in Energy and Environmental Education in Massachusetts in 2008.

Buying Local Resources

MA. Dept. of Agricultural Resources
251 Causeway Street Suite 500
Boston, MA 02114
www.mass.gov/agr

Mass. Buy Local Organizations

Berkshire Grown 413-528-0041
www.berkshiregrown.org

Buy Fresh (Essex County)
www.buyfresh.org

Community Involved in Sustainable Agriculture (CISA) 413-665-7100
www.buylocalfood.com

Farm Fresh (Rhode Island)
www.farmfresh.org

Island Grown (Martha's Vineyard)
www.islandgrown.org

Southeastern Mass. Agricultural Partnership (SEMAP)
508-999-8000 www.semaponline.org

Massachusetts Town Agricultural Commissions www.massagcom.org

Massachusetts Association of Road-side Stands and Pick-Your-Own
www.massfarmstands.com

Northeast Food & Farm Network
www.newfood.org

Other Websites

BioDynamic Farming
www.biodynamics.com/csa.html

Chefs Collaborative
<http://chefs collaborative.org>

Eatwild: The site for Grassfed Foods
www.eatwild.com

Energy Smack Down: (Reduce Carbon)
www.energysmackdown.com

Heritage Foods
www.heritagefoodsusa.com

Local Harvest
www.localharvest.org

Red Tomato
www.redtomato.org

SlowFood
www.slowfoodusa.org

Sustain
www.sustainusa.org

Sustainable Table
www.sustainabletable.org/issues/buylocal/

The Supermarket Coop
www.supermarketcoop.org

Information for this newsletter was taken from the resources listed above.

Buying Local

In today's global marketplace we can buy food that has been grown anywhere in the world at any time of the year, and the price for this food is seemingly very low. However, there may be hidden costs to communities, the environment and human health.

A movement is taking place toward buying local foods that are grown using practices that are sustainable and economically sound. Many informed consumers are choosing to buy food and other goods grown, raised or produced as close to home as possible. Here are some of the advantages.

Fresh and Nutritious

When food goes directly from the farm to the table, flavors are at their peak and nutrient levels are highest. Fruits and vegetables are living organisms that change physiologically as soon as they are picked. Temperature changes, air exposure, artificial lights and improper handling cause sugars to change rapidly to starch and enzymatic reactions to cause speedy loss of flavor appearance and texture, while vitamins and minerals deteriorate.

Variety and Shelf Life

Local farmers raise and sell a more diverse variety of produce than can be found in most supermarkets, choosing varieties with superior taste, a long season of harvest and to meet customer demand. These fresh vegetables, fruits, eggs, dairy and other farm-raised foods will store better and last longer, since they reach consumers soon after harvest with a minimum of processing and packaging.

Large commercial operations must grow varieties that have been hybridized to be harvested all at one time, stored and then shipped a long distance. Some produce may even be picked before it is ripe, preventing it from reaching its full nutritional potential. Products transported from distant farms may be subjected to the use of waxes, fungicides, irradiation and refrigeration to preserve quality and storage capacity.

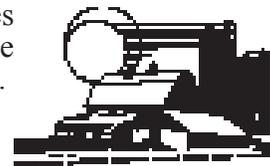
Food Miles



Industrialized and global agriculture may require that food traveling from farm to store, is trucked across the country, hauled in freighter ships over oceans or flown around the world. In *Checking the Food Odometer*, Richard Pirog reports that in the U.S., the average grocery store's produce travels nearly 1,500 miles between the farm and home refrigerator. A tremendous amount of fossil fuel is used to transport foods such long distances, releasing carbon dioxide, sulfur dioxide, particulate matter and other pollutants into the atmosphere.

Environmental Stewardship

Agriculture is part of our New England heritage. Fields, pastures and waterways contribute quietly and gently to our way of life by providing scenic vistas, open space and wildlife habitats that are critical for quality of life. Farmers are the stewards who protect and nurture more than 600,000 acres of open space across the state.



These small, local farms are operated by farmers who live on their land and work hard to preserve it for future generations. A diversity of crops are rotated regularly, while animals are moved from pasture to pasture. These sustainable practices replenish the soil, protect clean water and ensure the farm's future. Some large-scale farms have been linked to air and water pollution that degrades communities, erodes soil, depletes aquifers and reduces biodiversity.

Economic Value

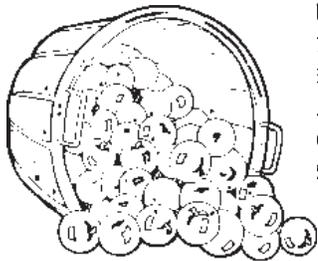
These scenic landscapes will survive only so long as farms are financially viable. By selling directly to consumers at the farm or farmers' market, the farmers earn a greater share of the consumer dollar. This allows them to sustain farm operations despite urban land encroachment pressure and rising costs.



The U.S. loses approximately two acres of farmland each minute as cities and suburbs spread into the surrounding communities and farmers are unable to compete. The majority of the money spent on grocery-store food goes to suppliers, processors, middlemen and marketers. It has been estimated that only 3.5 cents of each dollar goes to the farmer.

Community Integrity

Agriculture is a vital part of the economy of Massachusetts, employing thousands of people in a variety of careers on and off the farm. Local growers live in the community, patronize local businesses, hire local workers and pay taxes that are equal to more value than they require in services. For each dollar of revenue raised by farm, forest or open space, governments spend just 0.34 cents on services. In contrast, for every \$1 in revenue raised by residential development, governments must spend \$1.17 on services.



Building Relationships

Buying farm products from local farmers helps make connections between local food producers and consumers. Customers can talk directly to the farmer and ask questions about how the products they are buying are grown. This connection also allows the farmer to get feedback from customers that helps improve marketing and adds value to production.



Human Health

Many industrially produced foods are grown using pesticides, herbicides, antibiotics and growth hormones. Food from many farms may be pooled, making it difficult to trace the source of food-borne illness, antibiotic-resistant bacteria or pesticide residues. Once a dangerous mislabeled product has left a food store, the U.S.D.A. does not have the authority to order a recall but can only encourage the company to do so. This can cause delays that risk unsafe products being purchased and eaten by the consumer.

The Future

It is estimated that most U.S. states purchase eighty-five percent of their food from outside the state. In Massachusetts this translates to four billion dollars that leaves the state annually. Increased local food production would add significant additional food dollars to the state's economy. UMass studies have shown that Massachusetts could produce closer to thirty five percent of its food supply, contributing one billion dollars annually.

As the number of local farms decreases, there is concern regarding the ability of future generations to feed themselves in a healthy sustainable way, as well as concern about how the region would obtain adequate food supplies in an emergency that cut off transportation routes. Buying local food today is an excellent way to bolster your local economy and support small farms that protect the environment and promote food security. At the same time you can enjoy healthy, flavorful and seasonal foods and encourage the future production of sustainable food.

What You Can Do

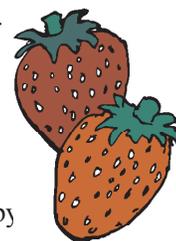
1. Buy fresh fruits, vegetables and other foods directly **from your local farmer**. Find a list of local farms and products on Mass. Department of Agricultural Resources website at www.mass.gov/agr/massgrown/index.htm.
2. Shop at one of the more than 160 **Farmer's Markets** located throughout the state. Find one located near you at www.massfarmersmarkets.org.
3. Visit a local **pick-your-own farm** and harvest your own apples, peaches, blueberries, raspberries, strawberries, pumpkins, vegetables and flowers in season. Find a list at www.mass.gov/agr/massgrown/pick-your-own.htm.
4. Buy a **farm share** from one of the seventy **Community Supported Agriculture** farms located across the state. For a list visit www.mass.gov/agr/massgrown/csa.htm.
5. **Eat seasonally** by consuming fruits and vegetables only during the time of year they are harvested. For seasonal recipes, visit www.nrdc.org/health/foodmiles/recipes.asp. Encourage your **local grocery store** to stock local foods.
6. Find a **nearby restaurant that features local foods** at www.chefscollaborative.org.

7. Join the **100-mile diet movement**, use the mapping tool to find your region and take the local eating for global health pledge at www.nrdc.org/health/foodmiles/recipes.asp.

8. **Plant a garden** and grow your own fresh produce. If you don't have garden space, grow herbs and some vegetables in a container on your patio or porch.

9. **Can or freeze seasonal foods** in order to eat and enjoy them year round.

10. Add one or more of the following books to your **reading list** this year.



100 Mile Diet: A Year of Local Eating by Alisa Smith and J.P. MacKinnen.

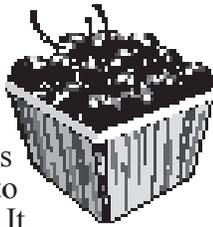
Animal, Vegetable Miracle: A Year in Food Life by Barbara Kingsolver.

In Defense of Food: An Eater's Manifesto and *Omnivore's Dilemma: A Natural History of Four Meals* by Michael Pollan.

Slow Food Revolution: A New Culture for Dining and Living by Gigi Padovani

Fruits & Vegetables Give Us

Fruits and vegetables are a crucial part of a healthy diet. They contain vitamins, minerals, antioxidants, fiber and the disease-fighting phytonutrients that give them their bright colors. Nutritionists advise us to “eat the rainbow.” Here are just some of the benefits.



Vitamin A keeps eyes healthy and able to adjust to dim light. It helps keep skin healthy. It also helps keep the lining of the mouth, nose, throat and digestive tract healthy and resistant to infection. It promotes growth.

Vitamin B - Folic Acid helps prevent birth defects and lowers levels of homocysteine, an amino acid linked to heart disease.

Vitamin C helps strengthen blood vessels and hastens healing of wounds and bones. It increases resistance to infections, and it helps absorb iron in the diet.

Vitamin E promotes healthy skin, eyes and healing.



Calcium is needed for healthy bones and teeth. It also helps blood clotting and aids in muscle contraction and normal nerve functions.

Iron combines with protein in the blood to form hemoglobin.

Phytonutrients or phytochemicals include carotenoids, flavonoids, inositol, phosphates, lignans, isothiocyanates, phenols and the cyclic compounds, saponins and sulfides. While these nutrients are not as essential for life as protein, fat, vitamins and minerals, it is believed and reported by the U.S.D.A. that they may serve as antioxidants; enhance the immune system; alter estrogen metabolism; cause cancer cells to die, and repair DNA damage caused by smoking and other toxic exposures.

Currently, most information is known about **carotenoids**, the red, orange and yellow pigments in plants. Fruits and vegetables high in carotenoids appear to protect against certain cancers, heart disease and age-related macular degeneration.

Country of Origin Labeling

Starting **September 30th, 2008**, a **mandatory country of origin labeling program** will go into effect. This rule covers beef, veal, lamb, chicken, goat and pork; perishable agricultural commodities including fresh and frozen fruits and vegetables; macadamia nuts; pecans; ginseng, and peanuts. A similar labeling program was implemented for fish and shellfish in October of 2004.



Any of the commodities covered under this labeling program must be labeled to indicate their country of origin before they can be sold in the United States. However, ingredients in processed food items are excluded, as are those foods that have undergone a physical or chemical change such as cooking, curing and smoking, or foods that have been combined with other substantive food components. Food service establishments are also exempt from the mandatory labeling requirements. Copies of the interim final rule can be found on the web at: www.ams.usda.gov/COOL.

Interpreting Food Labels

Ask students to bring in a number of familiar items that they might eat at home. Read the labels together paying attention to the items below:

Serving Size: Serving sizes are standardized to make it easier to compare similar foods. They are also provided in familiar units, such as cups or pieces, followed by the metric amount. Pay attention to how many servings there are in the food package.

Calories: Calories provide a measure of how much energy you get from a serving of this food. The calorie section of the label can help you manage your weight. Pay attention to how many calories come from fat. (40 Calories is low, 100 Calories is moderate, and 400 Calories or more is high.)

Nutrients: The top of the label shows some key nutrients that have an impact on health and separates them into two main groups. The nutrients listed first are the ones Americans generally eat in adequate amounts, or even too much.

Limit fat, saturated fat, trans fat, cholesterol and sodium.

Most Americans don't get enough dietary fiber, vitamin A, vitamin C, calcium, and iron in their diets. Eating enough of these nutrients can improve your health and help reduce the risk of some diseases and conditions.

The Percent Daily Value: The percentage daily values (%DVs) are based on the daily value recommendations for key nutrients. These are based on a 2,000 calorie diet. If your average diet is larger or smaller, these numbers should be adapted. The percentage daily value helps you determine if a serving of food is high or low in a nutrient.

There is no percentage daily value listed for Trans fats, Sugars and Protein on the label. Most Americans get enough protein diet and health experts recommend that we keep the intake of saturated fat, trans fat, cholesterol and added sugar as low as possible. For more information and food label activity ideas visit

Nutrition Facts

Serving Size 1 cup (228g)	
Servings Per Container 2	
Amount Per Serving	
Calories 250	Calories from Fat 110
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 1.5g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%
* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g

Community Supported Agriculture

Community Supported Agriculture (CSA) is a **partnership of mutual commitment between a farm and a community of supporters.** It provides a direct link between production and consumption of food, keeping food dollars in the community. Together local farmers, growers and community members help create an economically stable farm operation in which members are assured the highest quality produce, often at below retail prices. In return, farmers and growers are guaranteed a reliable market for a diverse selection of crops.

There are many kinds of CSA farms. All include payment in advance at an agreed upon price that represents the costs for seeds, fertilizer, water, equipment maintenance, labor and the farmer's livelihood. This commitment implies a willingness to share both the bounty of the farm and some of the risks involved. In return for fair and guaranteed compensation, consumers receive a variety of freshly picked produce, grown and distributed in an economically viable and ecologically responsible manner. Some farms also offer fruit, herbs, flowers, meats, eggs, cheese and baked goods.

In some CSA farms, community members purchase a "share" of the anticipated harvest, usually designated as the weekly vegetable needs for a family of four. Share prices reflect many variables, and range from \$300 to \$700. At other farms, members sign up for a predetermined amount of produce over the season.

Many CSA farms offer their shareholders the opportunity to work in the fields or distribute produce in exchange for a discounted share price. Others offer sliding scales to accommodate lower income consumers. In this way, farmers and members become partners in the production, distribution and consumption of locally grown food.

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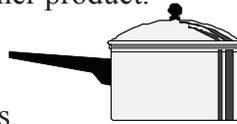
Protecting Nutrients in Food

Air - Vitamins A; C; E; K, and the B vitamins, thiamin, pyridoxine, biotin, and folate (also called folic acid), are destroyed by exposure to air. To reduce nutrient loss: cut and cook vegetables using the largest size pieces possible; store foods with tight covers; cook vegetables soon after cutting; cook vegetables until they are "just tender" and prepare food as close to serving time as possible.

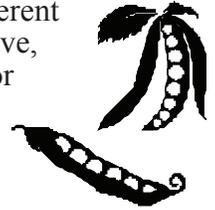
Water - Avoid soaking food in water, unless absolutely necessary, as it dissolves water-soluble vitamins and minerals. If foods must be soaked or remain in water during cooking, use the smallest amount of water possible and use the leftover cooking liquid in soup or in another product.

Heat - Heating food causes nutrient loss, especially Vitamin C.

Frozen peas are significantly higher in Vitamin C than canned peas



because heat from the canning process has already destroyed some of the Vitamin C in canned peas. Fresh or frozen vegetables can be cooked by several different methods: microwave, steam, bake, or sauté them. Avoid long exposure to heat.



Light - Milk is an excellent source of riboflavin; but if it is allowed to stand open or is exposed to light, considerable destruction of riboflavin can occur. A light-blocking container, such as a cardboard carton, can help prevent this. If you are using another type of container, be sure to store it away from light.

pH Balance - Do not add baking soda to green vegetables to retain color during cooking. It makes the cooking water alkaline, destroying thiamin and Vitamin C.

Cook Small Amounts - Cook only the vegetables needed for one meal.

Massachusetts Grown Fruit Vegetables & Products

Bring in pictures or samples of some of these Massachusetts grown products and ask students to identify them. How many do they eat at home?

Fruits: apples, apricots, beach plums, black raspberries, blackberries, blueberries, cantaloupe, cherries, cranberries, currants, grapes, gooseberries, honeydew melons, peaches, pears, plums, raspberries, strawberries, pumpkins and watermelon.

Vegetables: artichoke, bean sprouts, beets, broccoli, carrots, cauliflower, celery, chard, collards, corn, cucumbers, dry beans, eggplant, garlic, green beans, kale, leeks, lettuce, mesclun greens, okra, onion, parsnips, peas, peppers, potato, radish, rutabaga, spinach, squash, sweet potato, tomatoes and turnip.

Other: flowers, gourds, hay, herbs, honey, maple syrup, rhubarb, sunflowers and value added products from fresh produce such as jams, jellies, preserves, sauces, salsa and juices.



Activity Ideas

1. Investigate the history of your local community. How many farms were here 100 years ago? How many are there today? What do they grow?
2. Invite a local farmer to visit the classroom to talk about the work that takes place on the farm. Ask them to bring in some of the tools they use.
3. Plan a trip to a local farm. Ask students to write a story about the farms' history and daily life there today.
4. Bring in a variety of fruits and vegetables. How many are grown on Massachusetts farms? Have a tasting party. Research the nutrients in each.
5. Ask students to develop and administer a survey designed to find out what consumers are looking for when buying fresh fruits and vegetables. Discuss how advertising and product presentation affect the sale of foods. How would you advertise locally grown foods?

Workshops on the Farm

Join us for one of our fall or winter workshops and try out some hands-on activities for the classroom while you get to know these farms and farm efforts. Each workshop runs from 9 to 3 and highlights a different area of Mass. agriculture with exploration of the work that goes on at that site. The \$30 fee includes PDPs, lunch and all materials.

Saturday, November 8th takes us to **South Hadley High School**, where teacher **Jacob Masenior** and some of the students will introduce the acclaimed composting program that has been integrated throughout the school. Students will show off other aspects of their "green school" program including recycling and enviro-club endeavors. Learn about links to the local community and discuss things you and your students can do to decrease your environmental impact.

During the winter break, spend **Tuesday, February 17** at the **Warren Farm & Sugar House** in **North Brookfield**. Over morning coffee and treats learn about maple sugar history, Native American traditions and changes from Colonial times to today with owners **Jan & Dale Wentworth**. There will also be information on current threats to maple trees from



global warming and the Asian long-horned beetles, and how their potential effects daily life and economic aspects in New England. Following a unique maple lunch, we'll spend the afternoon out-of-doors, exploring the sugaring operation and sugar house. You will assist with tubing installation and tap a tree, make maple candy and try out other hands-on activities to use in the classroom. Bring warm clothes and boots. Middle and high school teachers encouraged.

Annual Conference

MAC will host a full-day conference for teachers at the **Baird Middle School** in **Ludlow** on **Saturday, February 7th**, from **9 a.m. to 3 p.m.** This conference will provide teachers with activity ideas, resources and framework connections to bring agriculture alive in the classroom.

Four concurrent sessions will be held throughout the day. Each will be taught by a teacher or teacher working together with a farmer and will offer specific background and activities for the elementary, middle or high school level. The \$45 fee (\$40 for registrations received by December 1) includes all workshops, lunch, materials and ten PDPs with a related classroom activity. Check below to request a brochure or visit the MAC website at www.aginclassroom.org.

Massachusetts Ag Tags



The final effort is now on to reach our goal of 1500 plates ordered. Once reached, the new **Massachusetts Agriculture Specialty License Plates** will be produced. The next few months are critical, so order now.

Proceeds from license plate sales will fund the **Massachusetts Agricultural Trust**, which will support marketing and education programs and services to help farmers succeed.

The cost to transfer your current registration to an "Ag Tag" is \$60. This amount includes a \$40 donation to the Agricultural Trust, and a \$20 fee to swap the plate when it arrives. Renewals, every second year, cost \$81, including a \$41 RMV registration fee, and \$40 contribution to the Trust. We hope that you'll mark your support for MAC, when you send in your order. To apply for your Mass. Ag Tag License, send a \$40 check made payable to the RMV. For more information on the Ag Tag, visit www.mass.gov/agr/agttag.

REGISTRATION ... DONATION... MATERIAL ORDER FORM

Please fill out this form and return it to: **MAC, Inc. P. O. Box 345 Seekonk, MA 02771**

Name _____

School or Organization _____ Address _____

City _____ State _____ Zip _____

Phone Number (day) _____ (evening) _____ e-mail _____

I am registering for the following workshop (s): \$30 enclosed for each workshop registration, please send directions

November 8 at South Hadley High School February 17, Maple Sugaring Workshop in North Brookfield

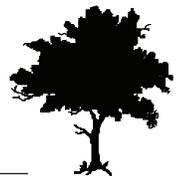
I am registering for the Annual Conference, February 7 \$45 enclosed (\$40 before Dec.1),

Please send conference brochure (Make Check payable TO MAC)

Please send information on: The Summer Graduate Course; MAC Annual Report; Mini-Grant Guidelines

Farm Field Trip Manual \$12; 8 Lessons about Agriculture & Environment \$5; School Gardening Manual \$10

I'd like to make a tax-deductible donation in the amount of: \$50; \$25; \$10 Other donation _____



Calendar

- 🐝 **October 3-4 - Pollinator Conference**, 8:30 a.m. to 4 p.m. at UMass, Amherst. Visit www.millersriver.net/pollen.
- 🐝 **October 4-13 - The Topsfield Fair**, 10 a.m. to 10 p.m. daily. For information visit www.topsfieldfair.org.
- 🐝 **October 8 - MA Envirothon Workshop** for HS educators, West Boylston. Visit www.maenvirothon.org.
- 🐝 **October 11 - 12, Cranberry Harvest Festival**, at A.D. Makepeace in Wareham, visit www.cranberries.org.
- 🐝 **October 24-26, Bioneers by the Bay Connecting for Change Conference**, in New Bedford. For information visit: www.connectingforchange.org.
- 🐝 **November 5-7 NE Greenhouse Conference & Expo.** in Worcester, Visit www.negreenhouse.org.
- 🐝 **November 6 - December 18 - UMass Green School**, Milford, 413-545-0895 or <http://umassgreeninfo.org/>.
- 🐝 **Dec. 4-5, Mass. Farm Bureau Annual Meeting**, Marshfield. Visit www.massfarmbureau.com. Donate a raffle item to support MAC, call Marjorie Cooper at 508-892-3720 or marjoriechf@charter.net.

Resources

- 🐝 **Introduction to Pollinators**, a Power Point Presentation from the US. Fish & Wildlife Service can be found at www.millersriver.net/pollen/.
- 🐝 **Assess Your Water Footprint** and compare to the national average at www.h2oconserve.org/wc.
- 🐝 **National Agriculture Library** from the U.S.D.A. can be visited at <http://weblogs.nal.usda.gov/infotfarm/>.
- 🐝 **Local Pick-Your-Own Orchards** and Orchard tours can be found at www.massfruitgrowers.org.
- 🐝 **Bet the Farm** - An interactive game based on Ohio agriculture can be found at www.cosi.org/visitors/on-line-activities/farm/.
- 🐝 **Printable Lesson Plans & Other Agricultural Resources** from Illinois AITC at www.aginthe classroom.org/060605/aitchome.html
- 🐝 **SARE 20/20: Celebrating our First 20 Years/Envisioning the Next**, a sustainable ag. innovation story vision can be downloaded from www.sare.org/publications/highlights.htm.

- 🐝 MAC is seeking nominations for the **2009 MAC Teacher of the Year Award**. Do you know a teacher who does an exceptional job of bringing agriculture alive in their classroom? Please consider nominating him/her for this special award. Send a description of their agricultural classroom, and the reason that you recommend them for the award, to the address below. Applications are due March 15, 2009. The winner will be highlighted in the Fall 2009 MAC newsletter and the award will be presented at our MAC Annual Conference in February of 2010.

To receive more information, add a name to our mailing list or give us your comments:

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call Debi Hogan
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Website: www.aginclassroom.org

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