

Massachusetts Agriculture in the Classroom

**Social Studies
Economics
Nutrition
Science**



Workshops & Conferences

Annual Winter Conference
Saturday, March 10, 8:30 - 3:30
Paul R. Baird Middle School
Ludlow, MA \$50

Chickens, Eggs & Soils Workshop
Friday, April 20, 9:00 - 3:00
Heifer Project, Rutland, MA \$30

Summer Graduate Course
8 Workshops on Massachusetts Farms
Starting: Wednesday, June 27, 2012
Ending: Wednesday, August 15, 2012
Farms across the State
Details on page 7.

Feature Topic:



Siting the School Garden

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.

New State-Wide School Gardening Initiative

For 2012 **Massachusetts Agriculture in the Classroom** is undertaking a new **Garden-Based Education Initiative** and we need your support to ensure success. The initiative covers five projects including: a directory of school gardens and local garden resources; how-to-guides for getting started in the school garden; lesson plans for grades 1-4; professional development workshops for educators and direct school garden mentoring.



Students learn about seeds as they prepare to plant their school garden.

The **School Gardening Directory** includes three unique resources for educators looking for support for new or on-going school garden projects. The first is a list of active school gardens across the state. Secondly, we are compiling a resource directory of nurseries, garden centers, greenhouses, farms and other businesses that sell seeds, plants, tools and other materials needed for gardens at the school. The final directory will offer a list of people and organizations who provide education and technical support for school gardens. Visit the MAC website to submit one of three questionnaires to let us know about your school garden program or the materials or assistance you can provide.

MAC is also working to develop a series of technical **How-to-Guides for Getting Started in the School Garden**. These guides will cover topics from soils and composting to siting the garden; building beds; selecting plants; seeding; transplanting; watering, and identifying insects and weeds to help assure success for those starting a school garden. We will begin posting these useful resources in February.

MAC will also be adding **Garden-Based Lessons Plans** for grades 1-4 to our website. **Professional development workshops** will be conducted throughout the year. Finally, we will pilot a **Garden Mentoring Program** at twenty schools. This new Garden-Based Education Initiative is partially funded thanks to a **USDA Specialty Crops Grant** through the **Massachusetts Department of Agricultural Resources**.

We Need Your Support!

MAC is a small non-profit that has been **working since 1984 to support agricultural education in classrooms and school gardens across the state**. We provide agricultural education resources and technical information; professional development workshops and conferences, mini-grants and much more. All programs are funded through donations and grants. If you like what we do, we ask you to support our educational programs with a donation today. Your tax deductible gift will make a real difference.

2011 Mini Grants

The MAC Mini-Grant program awarded **\$7,512 in 2011** to support the **thirteen worthy agricultural education projects** listed below. Grants of up to \$1,500 are awarded three times a year. The deadlines for proposal submissions are the first of April, September and November. We encourage any Massachusetts educators to submit a proposal to enhance their education program. More information and mini-grant guidelines are available on the MAC website, or send questions to massaginclassroom@earthlink.net.



April 2011 Mini-Grants

- “Pilgrim Academy Outdoor Classroom”
Pilgrim Academy, Plymouth \$650
- “Growing Seeds - Growing Minds”
John Page Elementary, W. Newbury \$670
- “Going Back to Our Roots Garden Project”
Delaney Elem. School, Wrentham \$650

“We’re Going to the Big E”
Harvard-Kent Elem., Charlestown \$850

“Reflective Volunteering on Local Farm”
M. L. King School, Cambridge \$300

“What Can You Feed Your Family”
Glen Urquhart School, Beverly Farms \$300

April Funding Total \$3,420

September 2011 Mini-Grants

“Meet Your Farmer”
Groundwork Somerville \$362

“Egg to Chicken: Birds in Classroom”
Natick Community Organic Farm \$500

“Farm Volunteer Days”
Greenagers, Great Barrington \$510

September Funding Total \$1,372

November 2011 Mini-Grants

“Bagnall’s Children’s Garden Classroom”
Dr. Elmer Bagnall Elem., Groveland \$500

“The Year’s First Harvest: Maple Syrup”
Heath Elementary School \$1,000

“Worms, Nature’s Recyclers”
Wellfleet Elementary School \$420

“Teaching Agricultural Literacy with
The Omnivores Dilemma”
J. F. K. Middle School, Florence \$800

November Funding Total \$2,720

**Total 2011
Mini-Grant Awards \$7,512**

President’s Message

We are your agricultural education non-profit organization. Our objective is to provide agricultural education resources, materials and training to assist teachers in integrating agriculture into what they want to teach and what they need to teach. The list of educators that we reach with our programs and resources crosses the state and is ever expanding.

Our annual **Winter Conference** will be held in Ludlow on **Saturday, March 10**, offering twenty-four workshops to help bring agriculture from the farm to the classroom. We also offer a Fall Conference in Brookline. More than a dozen workshops are presented on farms across the state in the spring, summer and fall. Some integrate with our Summer Graduate Course offered in conjunction with **Fitchburg State University**. We thank those of you who present at these workshops or offer your farms as educational sites where teachers learn what you do.

We maintain an educational website which we are told, by those who have one foot in agriculture and one foot in education, provides great ideas and information pertinent to New England. We are confident in our ability to do what we do and we feel that it is time to grow.

We have secured a Specialty Crops Grant which challenges us to provide garden-based education resources state-wide. Encouraging youth to garden is very popular today. I think that each of us can think of several reasons that this is a good idea. This is a leap of faith by our small non-profit and we feel that we are ready. Go to www.aginclassroom.org and follow this new School Gardening Initiative. We appreciate your support through the years. Please stay with us.

*Marjorie Cooper
President*



Volunteer With MAC!

Massachusetts Agriculture in the Classroom is growing and we are looking for volunteers to help us grow. These volunteers will assist with our conferences and workshops on the farm. We are also seeking assistance to support an expanding outreach to parents and young children at fairs, festivals, farmers’ markets and other educational venues.

We invite you to join us as a volunteer. You will be supporting MAC, while learning more about agriculture. A training session is scheduled for the Winter School Vacation Week on **February 21 & 23 in Marlborough from 9 a.m. to 2 p.m.**, with lunch included. Once training is completed, you’ll be given the opportunity to represent MAC at public events, working along with at least one other volunteer or board member.

If you, or someone you know, would make a terrific volunteer for MAC, please let us know. The training is sure to be both educational and fun. Volunteer training is supported thanks to a grant from the **Massachusetts Society for Promoting Agriculture**.

Win a Trip to the Big E!

MAC and the **Mass. Trustees of Eastern States Exposition** are partnering to promote the **2nd Annual Massachusetts Agri-Science Excellence Award**. The winning teacher will receive recognition in the MAC newsletter; a plaque and award ceremony at the Big E; a classroom grant of \$200, and a trip to the Big E with busing and tickets for his/her students for September of 2012. The application and guidelines can be found on the MAC website under grants and awards and are due February 14.

Two additional bus trips and tickets to the Big E will be awarded to two urban teachers and classrooms in eastern Massachusetts, courtesy of the Eastern Massachusetts Trustees of the Big E. To apply, send an e-mail to MAC with your name, school, grade and a brief description of how the trip to the fair will benefit your students. Send by February 14. Awards will be notified in March.

Resources for Siting the School Garden

Mass. Dept. of Agricultural Resources
www.mass.gov/agr

Mass. Flower Growers Association
www.massflowergrowers.com

Mass. Nursery & Landscape Association
www.mnla.com

Mass. Dept of Environmental Protection
Bureau of Waste Prev. - Composting
www.thegreenteam.org

National Gardening Association
www.garden.org & www.kidsgardening.org

UMass Extension
www.umassextension.org/index.php/information/gardening
Soil Testing: www.umass.edu/soiltest/

URI Soil Testing - www.uri.edu/ce/factsheets/sheets/soiltest.html

USDA Food and Nutrition Program
www.fns.usda.gov - Grow it Books

USDA Plant Hardiness Zone Map
www.usna.usda.gov/Hardzone/ushzmap.html

US Botanic Garden - Planning & Planting
www.schoolgardenwizard.org

Other Curriculum & Resources Websites

American Community Garden Association
www.communitygarden.org &
<http://communitygardennews.org/gardenmosaics/index.htm>

Amer. Horticulture Society - www.ahs.org

CA Ag. Foundation - Gardens Curriculum
www.cfaic.org/gardensforlearning/

Junior Master Gardener Program
<http://jmgkids.us>

New York City's School Garden Program
<http://growtolearn.org>

Project Life Lab Science & School Gardens
www.lifelab.org

Soil & Water Conservation Society
www.swcs.org

School Garden Transformations
www.schoolgrounds.ca/projects.html

USDA Natural Resource Conservation Serv.
www.nrcs.usda.gov or <http://soils.usda.gov/>

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

Siting the School Garden

Planning and creating a successful school garden, whatever the size, is a multi-faceted project that takes time, organization and the support of your school and community. During the early stages, while you are gathering resources, building a team, and planning the learning program that will take place in the garden, it is also essential to go outdoors and learn as much as possible about the existing conditions on the property. In this way you can site the garden in the location where it has the best chance to succeed horticulturally and academically, while also planning for any modifications that may be required. Here are some of the things to consider.

Growing Conditions

Temperature and climate conditions vary enormously across the state. The **USDA Plant Hardiness Zone Map** can help you determine the growing zone for your area and the range of temperatures throughout the year. It will also help you determine the average number of frost free growing days in your area - and the safe dates for planting and harvest.

Microclimates are variabilities in climate and temperature within a small area, due to geographical features. For example, cold and frost settles into low lying areas, while sites on hilltops and slopes aren't as prone to early or late season frosts. Spaces surrounded by buildings can also be somewhat protected from frost. A late frost in the spring can kill young seedlings, while an early fall freeze will ruin fruits and vegetables. Farmer's lore tells us that these frosts are most likely to occur just before a full moon. When in doubt, cover plants overnight with old sheets or other light-weight material.

The amount of direct sunlight and the intensity of the sun will impact the health and vigor of plants. Most plants require a **minimum of six hours of direct sunlight** daily to flower and produce fruit. The intensity of the sun changes with time of day and angle. Afternoon light, as well as southern and western exposures produce more intense light. Observe the available light at various times of day during the growing season.



Soil

Soil supports plant life by providing nutrients and a medium for root growth. It's composed of mineral and organic components as well as air spaces. The mineral particles are either **sand, silt, or clay**, with sand being the largest particle and clay being the smallest. All loam soil types are some combination of these three particles.

The **organic component** refers to the bits of decomposing plant material. It provides nutrients and improves drainage while also holding moisture, so it can be used by plants. Air spaces provide oxygen for plant roots and allow water to percolate through soil.

Soil that is high in organic matter is essential for healthy growing plants. Investigate the soil in your school yard; it may vary a great deal across the property. Bring soil samples into the classroom and let the students determine the proportions of sand, silt and clay as well as the percentage of the organic content.

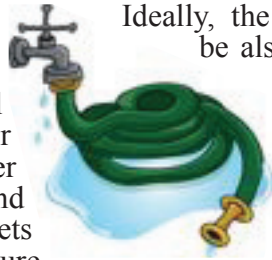
Go outside during a rainstorm to observe the surface drainage of the land. Look for areas where water channels washing the soil away, or puddles creating soggy ground. Conduct a percolation test to measure internal drainage by digging a small hole, about one foot by one foot. Then fill the hole with water and monitor how quickly the water drains away. If the water disappears in less than 10 minutes, the soil is extremely well-drained and probably has a lot of sand in it. If the hole still has water in it after an hour, the site has poor drainage and likely has high clay content.

In disturbed areas the ground may be compacted by foot and vehicle limiting drainage. Near buildings the topsoil has likely been replaced with construction fill that will not support plant life without extensive amendments. Lead from paint and other toxins may be also be present. It is essential to test the soil prior to planting an edible garden. Send soil samples to UMass Extension or URI for testing.



Water

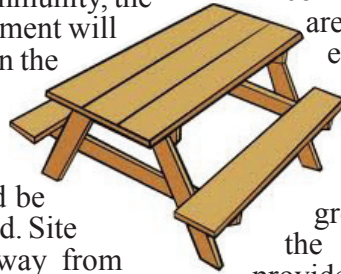
Water is essential for plant growth. To assure a successful school gardening experience for students and garden helpers, water should be readily available and easy to use. Locate outdoor faucets prior to siting the garden. Make sure that you and any garden helpers will have access to the faucet throughout the garden season, including summer vacation. Arrange for a new faucet if one is unavailable. Consider drip irrigation or automatic sprinklers for summer watering needs. Rain barrels can supplement available water.



Ideally, the school garden should be also be visible from each classroom that is utilizing the garden. Students will be able to make observations throughout the day and develop a stronger connection from the learning in the classroom to the garden. Additionally, the more visible the garden is to the school community, the more support and involvement will be available to help sustain the garden.

Safety in the Garden

The school garden should be a safe place for all involved. Site the garden in an area away from street traffic, busy driveways, loading docks, open water and any other potential hazards. Consider fencing if security is an issue, especially if vandalism is likely during times when garden is unsupervised. You may also need to fence out dogs, deer and other pests. Lock up any garden tools, cleaning products and fertilizers. Use only safe and non-toxic products such as horticultural soaps for pest control.



Meet in the Garden

Plan to create a meeting space in the garden where students can assemble to share their observations and experimentation. Seating can be as simple as hay bales or a picnic table. Make sure that some shade is available under a tree, umbrella or pavilion for those who need protection. Find opportunities to invite the community to see what you are doing by scheduling events in the garden.

No Soil - No Problem

There are schoolyards that offer no suitable in ground location for siting the school garden. They provide an opportunity to expand the garden horizons. Convert an outdoor patio or rooftop to a container garden. Build raised beds on an abandoned asphalt pad. Add window boxes and raised planters outside the classroom door. Collaborate with a nearby senior center, elderly facility, community garden, public library or other town site to create a common garden. There are sure to be a ready group of summer helpers.

Garden Solutions

The **addition of organic material to the soil** is the magic ingredient that can do much to alleviate many gardening problems. Compost is a great resource that will improve the fertility of your soil by holding nutrients until plant roots can absorb them. It also improves the structure of soil by loosening and aerating it, while increasing the water holding capacity. Compost also brings with it a host of beneficial soil organisms, and provides a good environment in which they can work.

When added to sandy soil with low water retention, the organic materials absorb some of the water making it available for absorption by plant roots. Conversely, when added to heavy clay soil that holds too much water, the larger particles of the compost will create more air spaces and allow the water to run through.

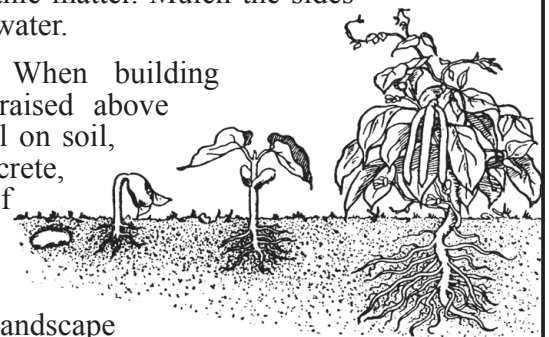
Composted food wastes, grass clippings, shredded leaves, weeds and well rotted manures will all add greatly to any garden. Amend the soil by spreading it over the garden and then digging it in. Mulch with compost to reduce loss of soil moisture. Blend a potting mix with equal parts compost and packaged soil. Make compost tea to fertilize your plants.

Prepare the garden beds by **double digging the soil** and adding amendments such as compost or fertilizer prior to planting. This will improve soil structure and

fertility and make it easier for the plant roots to grow through the soil and obtain the water and nutrients needed for plant growth. Dig and remove the soil from the garden area down to a depth of one foot. Shovel the soil onto burlap or plastic to make it easier to add the soil back to the garden later. Then loosen another foot of soil with a spading fork. Add compost and other organic materials such as chopped leaves and hay to the removed soil as well as any fertilizer you plan to use. Shovel the soil back into the garden space. The result will be a raised bed area with light loose soil rich in organic matter. Mulch the sides of beds to hold water.

Raised beds: When building beds that are raised above the ground level on soil, asphalt or concrete, line the sides of the beds with untreated wood or recycled plastic landscape

timbers. If soil is safe for garden use, loosen the soil below the raised planter to encourage root growth by double digging the soil. If building on soil with heavy metals or toxins, add a semi-permeable layer between the garden beds and the new soil. When building on top of asphalt or concrete, add a layer of gravel for drainage, before you add the soil to the new beds.



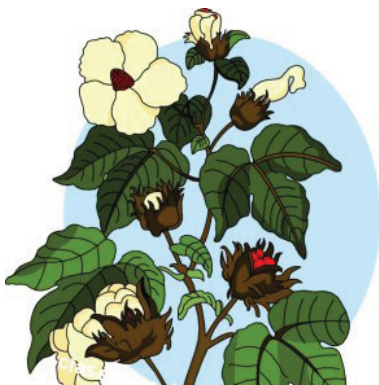
Create a School Landscape for Aesthetics and Learning

The school landscape can provide year-round beauty as well as creative opportunities to enrich the academic environment with opportunities for discovery. There are numerous woody plants that will withstand even the most hostile of cultural conditions. Find the right plant and it will thrive. Landscape horticulturist **Warren Leach** from Tranquil Lake Nursery offers the following tips for planting trees and shrubs in the school landscape.

Select **plants that will survive adverse cultural conditions** such as poor drainage, rubble, low fertility and summer drought. When drainage is a problem, select plants that will thrive in wet soil. Drought tolerant plants are ideal for soils composed mainly of construction fill.

Create a planting scheme that **emphasizes trees and shrubs with ornamental attributes that are at their best during the academic year.** There is a huge number of ornamental plants that put on a display of fragrant and ornamental flowers, sensational fruit and pods, colorful foliage and attractive bark in the late-winter, early spring and fall. Some will even bring birds and butterflies to the schoolyard.

Develop a list of **plants that will supplement learning** in the classroom. Plant witch hazels, willows and forsythia, whose cut branches are easy to forced into bloom in the classroom. Add fruit trees, herbs, cotton, and other commonly plants used for their food, fiber or medicinal properties. Don't neglect the spring bulbs and wildflowers and the late season beauties.



Woody Plants for an Attractive & Educational Landscape

Late Summer - Fall Bloomers

Hamamelis virginiana (Witch Hazel)
Heptacodium miconioides
(Seven-son Flower)

Winter - Early Spring Bloomers

Forsythia x. 'Spectabilis' (Golden Bells)
Hamamelis vernalis (Vernal Witch Hazel)
Hamamelis x 'Jelena'
Hamamelis x 'Arnold Promise'
Salix chaenomeloides (Pussy Willow)
Spiraea thunbergii 'Ogon'

Fabulously Fragrant Flowers

Hamamelis vernalis (Vernal Witch Hazel)
Syringa meyeri 'Palibin' (Dwarf Lilac)
Syringa patula 'Miss Kim' (Dwarf Lilac)
Viburnum carlesii
(Korean Spice Viburnum)

Colorful Fall Foliage

Aronia arbutifolia (Red Chokeberry)
Fothergilla x 'Mount Airy'
Rhus aromatica 'Gro-Low'
(Dwarf Fragrant Sumac)
Rhus typhina 'Laciniata'
(Laceleaf Staghorn Sumac)
Vaccinium angustifolium
(Lowbush Blueberry)
Vaccinium corymbosum
(Highbush Blueberry)
Viburnum carlesii

Colorful Fruit

Aronia arbutifolia (Red Chokeberry)
Ilex verticillata 'Winter Red'
(Winterberry Holly)
Myrica pensylvanica (Northern Bayberry)

Colorful Twigs & Bark

Betula nigra 'Little King'
(Dwarf River Birch)
Cornus sericea (Red-twig Dogwood)

Tough & Indestructible

Comptonia peregrina (Sweetfern)
Myrica pensylvanica (Bayberry)
Rhus aromatica 'Gro-Low'
(Dwarf Fragrant Sumac)
Sorbaria sorbifolia (Ural False Spiraea)

Summer Success

One of the biggest challenges educators face when contemplating a school garden is that of maintenance during the summer. When planning the garden be sure to engage many different members of your school and local community. This will provide a team that can step forward to offer support during the summer. Here are some other solutions from successful school gardens.

* Enlist the **aid of parent volunteers** to share the work. Create a summer schedule in spring and ask families to sign up to adopt the garden for one week during the summer. Reward them with the chance to harvest during their assigned week.

* Develop a **garden apprenticeship** program for the school garden and mentor a student from a local high school or youth group.

* Hire **student interns** to take care of the garden in summer. Write a job description and conduct interviews.

* Schedule a **work day in the garden** one day each week during the summer. Invite students, parents, teachers and community groups to join you in caring for the garden.

* Invite a **local summer camp** to utilize the garden as an outdoor educational classroom, or organize your own summer garden camp.

* Plant a **moveable garden** in containers and send the garden home with students for the summer.

* **Mulch heavily** to reduce weed competition and hold moisture in the soil so less watering is needed.

* Install **drip irrigation** under mulch and engage custodial staff to turn water on a few hours a week.

* Plant **drought-tolerant plants** that can survive without watering.

* Plant a **fall garden** and harvest in the spring. Remove all the plants before you leave for the summer.

Form a Support Team

The first step in the development of a successful school garden is the formation of a **support team of allies** to plan, develop and care for the garden. This planning committee will include teachers, administration, kitchen and custodial staff, as well as interested parents and students.

Meet regularly. Start by outlining the **goals and objectives** for the school garden. Why do you want the garden and how will it be used? Write a **mission statement** to help guide the garden project and future decisions. These planning elements will serve you well later in seeking donations or writing proposals.

As the committee plans what the school garden will look like and how it will be used, it will also begin to develop a **list of resources and materials** needed to accomplish these tasks. Once the garden is in place the committee will continue working to **oversee development and maintenance, evaluate success, troubleshoot** and organize volunteers and community support.

Seek **assistance from the community** for advice and support in building and maintaining the garden. Parents, local gardeners and professional horticulturists and builders can locate plants and materials, assist with construction and planting, provide useful technical information and even help you to raise funds. Be clear as to why you are involving the community, what you need and how and when you plan to utilize these services. Offer an orientation.

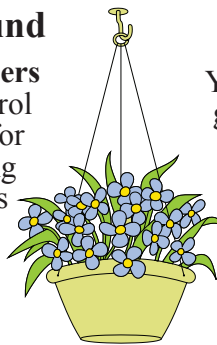
Consider hiring a **garden teacher** to provide consistency and coordinate garden time with the school staff and volunteers. Send garden **project updates** regularly to keep the attention of those within the school and without. Include the school superintendent and other officials, parents and the greater community.

Thank you to the Massachusetts Department of Agricultural Resources for a Specialty Crops Grant that supported development of the Teacher's Resource for School Gardening.

Massachusetts Agriculture in the Classroom
P.O. Box 345 Seekonk, MA 02771
www.aginclassroom.org

Garden above the Ground

Gardening in containers provides the means to control the environment, allowing for the optimization of growing culture when those conditions can not be met naturally. Choose containers when soil is unavailable; extremely poor in nutrients or water holding capacity; polluted with toxins or heavy metals; compacted by foot traffic; infested with nematodes and other soil borne pests, or where competition from tree roots limits growth.



Go Vertical: When space is limited consider vertical gardens. Add window boxes outside the classroom or on vertical racks. Use hanging baskets on patios. Build vertical planting walls of wood, with planting boxes lined with sphagnum moss or plastic. Be sure to consider watering needs and don't forget the climbers such as gourds, beans and tomatoes.

Take to the Rooftop and plant a container garden in light weight soil-less potting media.

Study Gardening

Your local garden club, nursery, garden center or farm can be a ready source for training and technical assistance. There are numerous garden organizations across the state that offer workshops, training and display gardens that can assist you in improving your gardening skills. Here are just a few:

Berkshire Botanical Garden
www.berkshirebotanical.org

Mass. Audubon Society - Drumlin Farm
www.massaudubon.org

Massachusetts Horticultural Society
www.masshort.org

Master Urban Gardeners Boston
www.bostonnatural.org/MUG.htm

Northeast Organic Farming Association
www.nofamass.org

URI Master Gardeners
<http://www.urimastergardeners.org/>

Western Mass. Master Gardeners Assn
<http://www.wmassmastergardeners.org/>

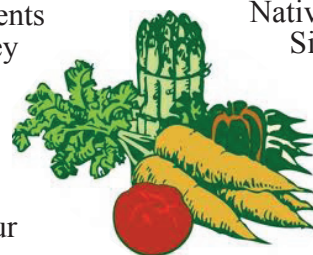
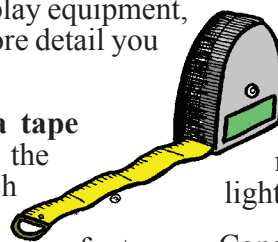
Worcester County Horticultural Society
www.towerhillbg.org

Map Your Site

A **base map** can serve as a foundation to guide the garden planning process. You and your students can measure and draw this yourselves or start with the legal plat of survey for the property and build from there using direct field observation.

Determine the dimensions of the site and locate the corners. Mark any buildings, walkways, play equipment, large trees, etc. The more detail you add the better.

Ask students to **use a tape measure** to determine the distances between each feature. Then scale down and mark the features on the map. This is a terrific opportunity to teach students about measuring. Then they can use the school-yard mapping as a real-world experience.



Now use the base map as the foundation for your garden design planning.

Garden Activity Ideas

Create a journal to track the progress of the school garden from planning to harvest. Ask students to write their own garden journal.

Include students in the garden planning process. How do they want to use the garden plants, for: flowers, food, wildlife, experimentation or to beautify the school grounds?

Ask students to **research requirements of the plants** they want to grow. How tall does each one grow? What needs does each have for soil, light, water and temperature?

Consider creating a **themed garden** such as: Colonial American; Native American; Three Sisters; wildlife attracting; woodland native; biodiversity and seed preservation; plants from the students native lands, or fruits and vegetables for eating and nutrition.

Annual Winter Conference

MAC is sponsoring our **11th Annual Winter Conference for Educators** at the **Paul R. Baird Middle School** in **Ludlow** on **Saturday, March 10th** from **8:30 a.m. to 3:30 p.m.** The conference provides teachers with activity ideas, resources and framework connections to link the farm and the classroom.

Four workshop sessions will be held during the day, with a choice of **six concurrent workshops per session.** Each workshop will be taught by a teacher, or teacher working together with a farmer, and will offer specific background and activities for either elementary, middle or high school. The **\$50 fee** includes all workshops; breakfast snack and lunch from nearby Randall's Farm; materials, and ten PDPs with a related classroom activity. A limited number of **scholarships** are available thanks to a grant from the **Farm Credit East AgEnhancement Program.** A full list of workshops, registration form and the scholarship information can be found on our website at www.aginclassroom.org.



Workshop on the Farm

Join us for a spring workshop on the farm and try out some hands-on activities for the classroom and garden. The workshop runs from **9 a.m. - 3 p.m.** The fee of \$30 includes PDPs, lunch and all materials.

Spend the spring break at **Heifer International's Learning Center** at **Overlook Farm** in **Rutland** on **Friday, April 20** learning about eggs, chickens and soils. We'll spend the morning with **Donna Kilpatrick**, Livestock Manager, and **Liz Ellis** Culinary Coordinator, learning about the history and science of chickens and eggs and cooking our own 'egg-centric' lunch. In the afternoon explore soils and composting with Garden Educator **Liz Joseph** and then tour the Learning Center's Global Village sites, barns and farm fields and learn their mission with Education Manager **Paul Bertler.** Limited to 12.

Summer Graduate Course

Check out our 3-credit Graduate Course presented with **Fitchburg State College.** The course meets Wednesdays, **June 27** and **August 15** in North Grafton from 9 a.m. to 3 p.m. Each participant will attend both sessions and participate in six additional workshops on the farm.

Exceptional Teacher Award

Do you know a teacher who does an exceptional job of bringing agriculture alive for their students? Consider nominating him or her for the **MAC Teacher of the Year Award for 2012.** Send us a description of his/her agricultural classroom and the reasons for your recommendation for the award. Applications are due **March 16, 2012** and will be announced in the autumn 2012 edition of our newsletter.



National Conference!

Mark Your Calendar! The **2012 National Agriculture in the Classroom Conference** will be held **June 19-22** in **Loveland, Colorado** at the Embassy Suites. The theme is: **Rendezvous in the Rockies.** The conference offers a variety of hands-on workshops and mini-workshops; make-and-take sessions and tours, as well as the opportunity to meet and share ideas with other educators. Find more information and registration at www.agclassroom.org.

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 Winter Conference on March 10 in Ludlow \$50 enclosed please send directions

I am registering for the Gardens and Soils Workshop on April 20 in Rutland \$30 enclosed please send directions

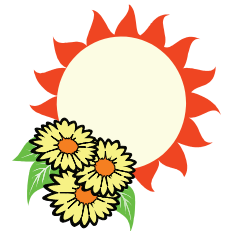
Please send information on:

The 2012 Summer Graduate Course; MAC 2011 Annual Report; Mini-Grant Guidelines

I would like to order: "Eight Lessons About Agriculture & the Environment" \$ 12

"Farm Field Trip Manual" \$12; "Schoolyard Gardens & Their Community Partnerships Manual" \$10

I'd like to make a tax-deductible donation in the amount of: \$100; \$50; \$25 Other donation _____



Calendar of Events

- 🐾 **February 9 to 11 - Soil & Nutrition Conference** from NOFA in Northampton. For information, visit www.nofa.org.
- 🐾 **March 7 & 8 - Ecological Landscaping Conference** in Springfield, at www.ecolandscaping.org
- 🐾 **March 14 - MEES Conference** at Holy Cross, Worc.. Theme Refresh: New Tools & Techniques for Today's Educators at www.massmees.org.
- 🐾 **March 15 - Mass Farm to School Convention** in Sturbridge. Visit www.mass.gov/agr/markets/Farm_to_school/.
- 🐾 **March 24 - Mass. Land Conservation Conference** 8-4 in Worcester, visit www.massconservation.org.
- 🐾 **April 7 - Massachusetts Agriculture Day** at State House. For info e-mail to agpromoboard@mfbf.org.
- 🐾 **April 21 - MA Sustainable Communities Conf.** UMass Boston, www.Masustainablecommunities.com.
- 🐾 **May 17 - Mass. Envirothon** at Blackstone River & Canal Sate Park, Uxbridge, www.maenvirothon.org.

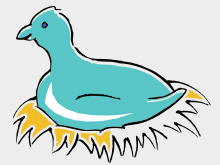
Resources

- 🐾 **2012 Ag Day Essay Contest** for hs students due 2/1, www.hpj.com.
- 🐾 **The Food Timeline:** A history of food from A-Z can be found at <http://foodtimeline.org>.
- 🐾 **Mass. Dairy Video, Recipes, Facts & More** at www.massdairy.com.
- 🐾 **My American Farm: Fact or Fairy Tale Game** for students in grades K-2 can be found at www.myamericanfarm.org.
- 🐾 **Learn Genetics** from the Genetics Science Learning Center, visit <http://learn.genetics.utah.edu/>.
- 🐾 **Nat. Science, Tech., Engineering & Math Video Game Challenge**, due March 12, stemchallenge.org.
- 🐾 **Secretary's Award for Excellence in Energy & Environmental Science** due March 29, visit <http://commpres.env.state.ma.us/exedu/>.
- 🐾 **Organic Seed Resources for Teachers** at http://attra.ncat.org/attra-pub/organic_seed/
- 🐾 **Pollinator Partnership** planting guides, teaching resources and curriculum at www.pollinator.org.

- 🐾 **2012 Massachusetts Agriculture Calendar Photo Contest.** Now is the time to start taking pictures for the 2012 Massachusetts Agriculture Calendar Photo Contest. Photos must be at least 4" by 6" and no larger than 8" by 10" and must have been taken in Massachusetts in the past three years. Send photos of local rural scenes, farm animals, and more by June 1 to Photo Contest, Mass. DAR, 251 Causeway Street, S. 500, Boston, MA 02114. For more information, e-mail to Richard.LeBlanc@state.ma.us. The twelve winners will be featured in the 2013 Mass. agriculture calendar and posted on MAC's website. For details visit www.mass.gov/agr/.

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

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