



Summer Care for the School Garden

This guide looks at horticultural and community solutions to the summer in your school garden. Whether you are lucky enough to have a summer program, or funding to hire a summer caretaker, or you need to recruit community support and volunteers, there are many techniques helpful for a low maintenance summer garden.

These Include:

- Mulch
- Open pollinated, low maintenance, long season crops
- Conserving water
- Setting up watering systems
- Summer dormancy
- Summer volunteers.

Mulch The Surface of your Garden

Maintaining a thick, continual mulch of decomposing organic materials on top of your garden beds is one of the best things you can do for your school garden's chance of success over the summer. Walk around a forested area. Digging into the forest floor you will notice larger leaves on top, and gradually more and more decomposed leaves as you dig deeper until you have reached a dark, springy layer underneath. This process of decomposing leaves and plant matter on the forest floor is producing this soil hummus.

When we mulch in a garden we mimic many of the same functions that exist in this forest ecosystem, by cooling and protecting the soil underneath, preventing weeds as unwanted competition for our vegetables and plants, supporting earthworms and other soil life, and building new soil in our garden.

Mulch has many benefits for a school garden particularly in the summer, both for the plants and for the humans taking care of them! Mulch can make your garden lower maintenance, by helping with the following factors, and more:

- **Weed control:** Prevents weeds from germinating and smothers existing weeds.
- **Moisture conservation and drought resistance:** Mulches can reduce soil evaporation, and increase the amount of water absorbed by a bed by holding water on the surface until the soil is able to absorb it.
- **Soil temperature:** Mulches generally regulate soil temperature keeping it cooler than bare soil. This can help cool season crops in summer heat.

Top Mulches for the Summer Vegetable Garden. Please see our [mulching guide](#) for more information. (Link in resource section)

Mulch	Depth	Notes/comments	Where to Find
Straw	4-6"	Watch out for hay that has mature seed heads, which will germinate in your garden. Straw is the stalks only of the grass plant.	Farms, garden centers, grow your own. Fairgrounds and other temporary events sometimes use bails - ask if you can have them afterwards!
Grass Clippings	2-3"	Thicker layers of only grass clippings tend to compact and become slimy. Mix with other mulches. Do not use clippings from lawns treated with herbicides.	School grounds. Landscaping companies. School families, DPW.
Dry Leaves	6"	Best to chop before spreading.	School grounds. Landscaping companies. School families, DPW: Many cities have leaf collection programs, ask about a leaf drop off at your school.
Composted Leaves/Leaf mould	3-4"	Better than dry leaves.	Collect leaves a year in advance and compost.
Compost.	3-4"	Great as mulch but can grow weeds- make sure it is from a good source that does not have weed seeds!	Landscape and garden supply, DPW, school cafeteria -make your own (be sure not to put weed seed heads in a small compost).

Preparing your mulch is an important step. Most mulches can benefit from being shredded or cut into smaller pieces. Pulling out sticks, or shredding leaves is a wise use of time in creating a mulch that will decompose when you would like it to, and create a mat that is less likely to blow away. Jumping in your leaf pile is an acceptable way to have kids break up leaves!

When applying mulch, make sure to follow these guidelines:

Place your mulch on **soil that is already weeded**. Pull weeds up by their roots and remove if they have seed heads or put in the compost pile if they don't.

Apply thickly! Thick enough to keep out sunlight and vigorous weed growth. At least- 4-6"!

Do not apply mulch directly in contact with plant stems or crowns. **Leave an inch or so of space next to plants** to help prevent diseases flourishing from excessive humidity.

Choose Open Pollinated, Long Season Crops

Many older or “heirloom” varieties of vegetables take longer to mature, are hardy, and are therefore well adapted for a summer garden. Commercially available seeds are usually bred for production farms, where an early harvest is desired and more water and care can be given. While these quick-to-harvest vegetables may be great for a spring harvest, the longer season heirlooms will take their time and be ready when you get back to the school in the fall. Open pollinated heirlooms have the added benefit of being suitable for seed saving, so that even if your vegetables mature before you can get to them, you can still save their seeds! Heirloom seeds also often have a wonderful variety of unusual colors and shapes, (purple carrots, tiger eye beans, multicolored popcorn!) which can add great interest and biodiversity to your garden, as well as historical curriculum connections.

For a more complete description about the how-to and why of choosing crops, with a special eye to school year gardening, please look over our “[Selecting the Plants for the School Garden](#)” guide, and our “[Fall Garden Guide](#)” (Links can be found in the resources section.)

Some crops that are particularly suited to low summer maintenance that you would plant in the spring, water and scout for pests over the summer, and harvest in the fall include:

PLANT	OPEN POLLINATED VARIETIES INCLUDE:
popcorn	Pennsylvania Dutch Butter, Dakota Black
dry beans	Vermont Cranberry, Tiger eye
flour corn	Painted Mountain, Abenaki Calais
onions	Walla Walla Sweet Spanish, Rossa Di Milano
leeks	King Richard, Lincoln
kale	Dinosaur, Red Russian
collards	Champion, Variegated ECO
carrots	Scarlet Nantes, Yellowstone
beets	Detroit Dark Red, Bulls Blood
cabbage	Mammoth Red Rock, Jersey Wakefield
turnips	Gilfeather, Red Round

Watering

Community strategies for watering, which are the most beneficial for your plants and community, are discussed later in this guide. Watering systems can be incredibly helpful for a low maintenance garden. Summer school gardens can essentially be like gardening in a drought environment if you do not have a summer program. This is another example where the challenges of a school garden can spark research projects and invitations to innovation for your students.

Understanding a little more about plant physiology and water can help your awareness in setting up a watering system. Debi Hogan explains:

“Water is essential to all plant life. It is the main constituent of plant cells and a critical element for making food energy and for cooling. Plants take in most water through small hairs on their roots. It is transported by capillary action through tiny tubes called **xylem** to the leaves. Under normal circumstances, the roots absorb more water than the plant needs. As much as 90 percent of water passing through a plant evaporates into the atmosphere, cooling the plant and the air around it.

The leaf regulates the amount of water in the plant through a process called **transpiration**. Any excess water is eliminated through tiny pores, known as stomata, located on the undersides of the leaf. **Stomata** is the Greek word for mouth. They are so tiny that one inch of leaf may contain 250,000 of them. Guard cells at these openings regulate the amount of water transpired.

Water in the leaf also combines with carbon dioxide from the air to make food energy during photosynthesis. The CO₂ enters the plant through the stomata and the oxygen byproduct of photosynthesis is expelled through the tiny pores. Each time the pores open to take in CO₂ or release O₂ a small amount of water also evaporates.

For optimum growth, plants need a steady supply of water. When there is not enough water, photosynthesis and transpiration are slowed. Eventually leaves will wilt and die. However, rainfall is variable in both frequency and quantity throughout the world. It also varies seasonally and is often unavailable for the plant to use.

Plants that live in arid environments, where there is not enough water, must be adept at conserving and storing water. They can tolerate conditions of low water, bright sunlight, extreme heat, dry winds and rapid temperature changes through a diverse variety of mechanisms, both physical and behavioral. Most successful plants utilize a combination of these characteristics.”

Amending your soil is the first step for having a garden with good water retention and drainage. A good soil mix that is not too clayey or sandy will ensure that your plants can take in the water that they receive. Adding organic material, such as compost, aged manure and shredded leaves to promote water percolation and retention. There are commercial products you can buy that may be beneficial for new trees or other perennials that require heavy watering during establishment, but generally adding organic amendments is sufficient for vegetable gardens.

Next, pay attention to rain. **Install a rain gauge** in your garden to determine the amount of rainfall your garden is already getting. Generally you want between an inch to an inch and a half of water per week for a vegetable garden, so any less than that and you will need to water at least once a week. That much and more and you can

often hold off. Keep in mind that things like wind, soil drainage, and germinating plants may also affect how often you need to water, so back up your rain gauge measurement with a human inspection for best results.

Watering is an art, and proper **technique** is important. Take the time to train your garden volunteers in watering. Try and water early in the day, or at least avoid mid day when you will get the most evaporation. Water the roots, not the leaves: you should water as near to the ground as you can so that the water is most efficiently used as well as avoiding scarring the leaves. Teach people to really soak the garden. If you water too shallowly your plants will develop weak root systems near the surface. Fewer deep waterings are better than frequent shallow waterings. When people water, teach them to stick a finger fully down into the soil to make sure it is moist all the way down. This being said, also teach them not to flood the garden, the water should drain down into the soil and not leave puddles. Pay particular attention to the edges of the beds, to be sure they get as much water as the middle!

Watering Systems

Installing a **rain barrel** is a great way to enable community watering. Even if you are unable to set it up under a gutter and collect rain water, it can still be a great way to store water for volunteers. As many outdoor spigots at schools require a key, consider filling a rain barrel with water and letting volunteers dunk watering cans in it to water the garden. This way they can come at any time of day and do not have to get a faucet key. A rain barrel can be anything from a nicely decorated 55 gallon food grade drum, to a large bucket. Just make sure it has a lid, and obviously that it has not previously been used for chemical storage.



Bowie School rain barrel, Chicoppee MA

The best way to water your garden over the summer is to use humans. Once properly trained, they should provide the best watering, and it is the most fun! This being said, sometimes you may need to install a sprinkler, or drip irrigation system.

Setting up an automated water timer

There are many models of automatic waterer timers available. You can set these up to water your garden on a set time pattern. Keep in mind they will water your garden whether it needs it or not. You should set them to

operate early or late in the day. Watering during the heat of the day is much less efficient. Even inexpensive ones are usually sophisticated enough to set by days of the week, so you could set it just to work on weekends.

Drip irrigation and soaker hoses

Get advice and do your research if you go this route as they require maintenance yearly and can be complicated to install. Drip irrigation systems are a great way to apply water directly to plants, and can reduce water consumption as much as 60 percent from the use of sprinkler. Drip irrigation can be intimidating, and get a beginners “kit” that will water most school garden sizes for under \$30. Try and buy one specifically designed for vegetables, rather than trees and perennials (unless this is what you are watering) and look to garden supply companies, or a local garden center for advice. Sometimes you can install these without a timer as they let out water very slowly all of the time. You could also look into bucket systems, which use suspended buckets, and gravity feed into the drip line. Soaker hoses can also be an option, although these should be attached to your hose timer, or carefully monitored as they usually let out much more water.

Please see our watering guide for school gardens for a more detailed account of the hows and whys of watering: http://aginclassroom.org/School%20Gardens/How-To-Guides_For_School%20Gardening/Watering%20the%20School%20Garden.htm

Innovative water retention techniques

Have your students research water retention techniques from around the world. There are many technologies out there used by people around the world to adapt to drought. Some of these are more relevant for in-ground growing situations but can be helpful in some school garden applications, especially as many gardens must be in unusual locations such as hilly areas. Use this list for ideas and as a jumping off point for innovative student projects!

Terraces: These are layers or steps built into a hill. This prevents water from running down the hill, often dragging soil with it. Consider terracing your beds

Swales: Swales are ditches with flat bottoms that collect water. They are usually located on the outer edges of a garden for the purpose of holding and sinking the water. This helps hydrate the soil. Swales prevent water from just running down the hill.

Berms: A raised plot of land or barrier used to prevent runoff. When designed next to a swale the two can work well together, as the berm can direct water to the swale and pull water from it for the plants growing on the berm as needed, conserving water and preserving the soil.

Hugelkultur: Translates loosely in German to ‘mound culture’. Hugelkultur is made by digging out a large hole, laying down logs and other wooded and natural debris and then covering it with soil which plants and trees can then be planted on. As the logs decompose they provide nutrients to the organisms living in the soil, as well as act as a sponge, soaking up water during rainfall and releasing it into the soil as needed; therefore Hugelkultur does not need watering, even in dry climates and during droughts.

Ollas: These are unglazed, porous clay pots that are planted underground near plants and deter water evaporation or run off. Water is poured directly into the olla and it releases the water to the root system of the plant as needed.

Chinampas: Often referred to as “floating gardens,” this is an ancient Mesoamerican agriculture method in ponds or wetlands, where artificial islands or peninsulas are created by piling up mud, lake sediment and other decaying vegetation until they protrude above the water. Seeds are then planted on these islands, and they never need to be watered. This method is known to produce extremely high yields and provides an ideal environment for plants and fish!

Summer Dormancy

If you are unable to visit your garden at all during the summer, at least at this point, consider getting started anyhow, and do a summer dormancy. Have nothing growing in your garden over the summer! While this sounds the opposite to the idea of having a school garden, focusing your energies on what you can do during the school year only, might be a good strategy for you at your school.

One way to do this is to plant short season, fast maturing crops such as peas, spinach, baby greens, and radish, and harvest them all before the end of school in June. You would then mulch your garden and leave it dormant for the summer vacation, with no watering or weeding of any kind, and then plant the same kinds of things when you got back in September. You would be limited to these cold season, quick maturing annual vegetables.

This spring and fall only growing could be enhanced if you were practicing season extension: utilizing structures that help you to start your plants earlier than you could in the outside air, and keep them alive later into the fall - such as cold frames, low tunnels, or a green house. This way you could keep your garden of cold season vegetables growing into the winter.

You could plant in pots, and bring your garden inside under lights during the cold parts of the year, and focus your efforts on this off-season indoor growing, instead of the summer. If you had a small container garden you could also consider bringing it home for the summer!

One innovative idea is to focus your school gardening efforts on **growing seedlings for other gardens.** Seedlings can be grown indoors under grow lights, in a greenhouse, or in the garden in low-tunnels, or simply in small areas in the garden designated as plant nurseries once the weather warms up. These plants could be grown in pots, or dug up and transplanted and sent home with the students, sold in a school plant sale, or donated to a community garden program. You can grow an amazing amount of seedlings in a small amount of space!

Places to look for summer volunteers

Parents are the obvious first place to look for summer volunteers. There may also be school staff working at the school for the summer, or summer programs at your school who could take on that responsibility. Retired people, civic groups, college students, community garden clubs and summer programs can also be great summer volunteers for your garden. Building your summer volunteer task force can also be a good way to build community support for your garden. One school garden we work with has their garden next to the next door fire station, particularly for the watering the fire men and women do while they are waiting at the station!

Have volunteers sign up at school events or a spring garden open house. Use a form, such as the one below, and have two volunteers or families sign up each week so that if one of them can not make it the garden is still covered. Have someone on your garden team send out reminders and check on the garden periodically. Find out the communication culture of your families and adapt your methods accordingly. Some people may use texting

more, others e-mail, still others letters posted in the garden. Work to translate your communications into the languages of your students families.

Hold a spring volunteer garden orientation and training, individually or as a group. Show proper watering technique, where to find equipment and supplies, how to weed, and explain which crops they will be able to harvest, and which ones you are saving for the students in the fall. For example, you may tell them to eat as many cherry tomatoes as they like, but please leave the carrots. It is best to back this up with an e-mail or letter with these instructions written down also, as well as posting them somewhere visible in the garden.

Leaving a garden note book/ log for each visitor to write in is a nice way to maintain communication in the garden through the summer. Provide seating or a picnic table and make maintaining the garden a much-sought-after job and destination during summer vacation!



School Garden Summer Team



Weed, water and eat for a week in the garden this summer. It's easy and delicious!

Please fill out this form and return to the office by ___/___ if you are interested or contact xxx at xxxxx. Thanks!
 We will then send you easy instructions, which will also be posted in the garden. You only need to visit once during your week for about 30 minutes! Thank you so much in advance for your help.

Your Name _____ **Child's Name** _____

Email _____ **Phone** _____,

Address: _____

Do you prefer: (circle one) e-mail, a phone call, a text message

Please rate your gardening experience:

Novice Intermediate Experienced

Anything else we should know?

Please number: **1st, 2nd and 3rd choice.** *(we are looking for two families for each week)*

June 19-25	June 26- July 2	July 3-9
July 10-16	July 17 – 23	July 24 – 30
July 31- August 6	August 7- 13	August 14 – 20
August 21- 27	August 28 – September 3	Fit me in any time!

If you have additional questions, call/ email Sue at xxxxx@xxxx.edu 413 000 0000

Hoja de registro: ¡Cuido del jardín escolar durante el verano!

¡Adopte el jardín escolar! Riegue, desmalece, y coma por una semana este verano.
¡Es fácil y divertido!



Por favor llene este formulario y entréguelo a la oficina lo más pronto posible si usted está interesad@.

Después de recibir los formularios, nosotras (las maestras de jardinería) les enviáramos instrucciones por correo, e-mail, o text. Las instrucciones también serán puestas en el jardín. Ud. solamente tiene que visitar una vez durante su semana por 30 minutos. Muchas gracias por su ayuda!

Nombre _____ **E-mail** _____
Número de teléfono _____
Domicilio _____

Enumere las semanas que Ud. prefiere en orden de preferencia (1ro, 2do, 3ro). (Estamos buscando a dos familias para cada semana)

Junio 19-25 Junio 26- Julio 2 Julio 3-9 Julio 10-16 Julio 17 – 23
Julio 24 – 30 Julio 31- Agosto 6 Agosto 7- 13 Agosto 14 – 20
Agosto 21- 27 Agosto 28 – Septiembre 3

Por favor califique su nivel de experiencia con jardinería:

Principiante Intermedio Avanzado

Algo más que deberíamos saber? _____

Si Ud. Tiene más preguntas, por favor llame o envíe un mensaje a Alex 000 000 0000 , xxxxxxx@xxxxx.edu (español) o a Sue 413 000 0000, xxxxxxx@xxxxx.edu (inglés)

Sources/ Resources

On Choosing Plants

“Selecting the Crops” guide. MAC 2012. For more on choosing school year plants:

http://www.aginclassroom.org/School%20Gardens/How-To-Guides_For_School%20Gardening/Selecting%20Plants%20for%20the%20School%20Garden.htm

“Fall Gardening Guide” MAC 2013. For more on planting for fall focused gardens:

http://aginclassroom.org/School%20Gardens/How-To-Guides_For_School%20Gardening/Fall_Gardening_Guide.htm

On Watering

Mass Agriculture in the Classroom Newsletter on Drought. Debi Hogan 2008

<http://www.aginclassroom.org/Newsletter/spring2008.html#conserving>.

More on drip irrigation systems from Colorado State University: <http://www.ext.colostate.edu/PUBS/Garden/04702.html>

Our Watering How-To Guide for School Gardens:

http://aginclassroom.org/School%20Gardens/How-To-Guides_For_School%20Gardening/Watering%20the%20School%20Garden.htm

UMass Extension - Water Conservation Checklist

www.umassgreeninfo.org/fact_sheets/plant_culture/water_conservation_checklist.html

Massachusetts Water Resources Authority

Gardening and Landscaping Tips

www.mwra.state.ma.us/04water/html/gardening.htm

On Community Involvement and Volunteers

“School Garden Start Up” guide for more ways to involve your community in the care of your garden in the summer and year round. (Insert link here...)

On Mulch

Mulching For a Successful School Garden. MAC 2012

http://aginclassroom.org/School%20Gardens/How-To-Guides_For_School%20Gardening/Mulching%20the%20School%20Garden.htm

Other Sources Used:

Mother Earth News: motherearthnews.com

Permaculture News: <http://permaculturenews.org>