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BUILDING  
SCHOOL  
GARDENS

PROGRAM MANUAL

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# BUILDING SCHOOL GARDENS

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### Why school gardens?

More people live in cities today than ever before. Right now, 80% of the United States population is found in metropolitan areas. That leaves a small amount of space available where a large number of people can connect with nature – at their neighborhood parks and forest preserves. These places are not always in walking distance or visited on a daily basis. But, for school-aged children, school grounds are. Why not use school grounds to develop a sense of place, a connection to the environment for urban dwellers?

Openlands views school gardens as vital to help connect children with the outdoors. One of our main organizational visions is to educate tomorrow's stewards. Current research tells us that children who experience nature from their earliest years through fifth grade are much more likely to adopt sustainable lifestyles and ethics as adult decision makers. If youth live in areas with little or no available or safe open space, they won't be motivated to create, protect and preserve that open space in the future. School gardens are a guided, safe way to connect with the outdoors and all of its benefits.

School gardens, as a main component of urban environmental education, can connect to any subject area – not as another mandate but as a replacement to indoor or lab-based activities. Be they native or edible gardens – each of these has the ability to teach us about our cultural and historical past or to encourage healthy eating habits by growing our own radish. It's time for school gardens.

*“In the end, there is really nothing more important than taking care of the earth and letting it take care of you.”*

CHARLES SCOTT



# BUILDING SCHOOL GARDENS

## Program Overview



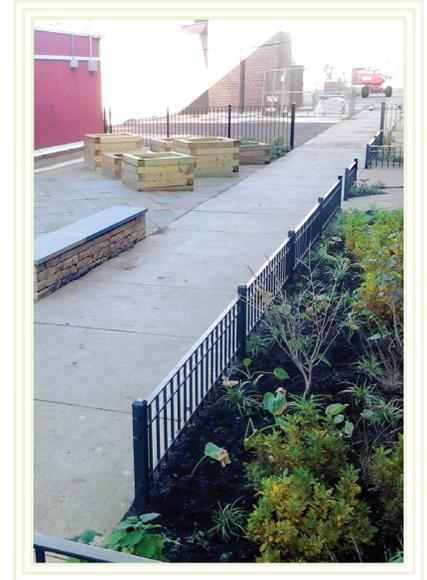
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Started during the 2006–07 school year, Building School Gardens installs gardens at Chicago Public Schools to achieve the following purposes:

- Develop “garden teams” to support the garden,
- Integrate the gardens into multi-disciplinary curriculum at multiple grade levels,
- Use art creatively in the landscape,
- Instill an environmental ethic in those who the gardens affect, and
- Incorporate physical activity as a regular daily activity

Based on each school’s curricular interests, Openlands works with garden teams to identify the goals and elements of every garden, hires subcontractors to carry out the designs and structural elements, and provides all of the materials and oversight for installation. Elements of the customized gardens may include:

- Benches for outdoor classroom seating for any subject;
- Raised vegetable beds for growing food and healthy eating;
- Native plantings to study insect and animal habitats, as well as ecological history of Chicago; and/or
- Ornamental gardens with ABC, color, math, or literature-inspired themes.





School gardens are incredible learning tools that allow students with limited access to nature to have that exposure. When starting a school garden, or looking to continue to support and maintain an existing school garden, several factors should be considered. These factors, listed below, were collected through surveys of Chicago-area school gardeners. They were supported by other (somewhat overlapping) research results from across the country.

Crucial factors determining the long-term success of a school garden:

- School administration support. Actual administrator support, not just acceptance of the school garden, can ensure that it becomes an integral part of the curriculum, as well as just be watered by maintenance staff over the summer.
- Staff support. A school garden must be created and maintained by more than just one teacher's efforts. An initially involved teacher, for one reason or another, may leave the school. It is better to have a group to begin with than a lone, outgoing staff member trying to recruit a colleague to take over the garden.
- Funding. Funds or supplies are need not only for a garden's initial installation, but also as a supplement to replace lost plants or to pay for the garden's expansion. There are many local, regional and national grant resources for these funds, as well as local school council monies, fundraisers, etc.
- Access to organizational support. Almost anywhere in the country you can find a nonprofit that has experts that can offer resources and counsel to a garden. In Chicago we have Green Teacher Network, Greencorps Chicago, and Master Gardeners, just to name a few. These "outsiders" are able to give extended support to a school that needs specific advice or just some additional energy for the project.
- Community/parent involvement. This aids in taking the summer maintenance and organizational weight off school staff and provides more support for the garden. This support is priceless!
- Time. A garden is meant to be used (not just looked at while entering and exiting the building). Time during the school day is needed to use it. School administration is critical in giving staff time allowances for garden experiences during the school day.
- Less restrictive curricula. A garden can be used to teach just about any subject area, but surveyed teachers expressed a desire to have the flexibility to teach through different media.
- Maintenance schedule. Without a watering, weeding and mulching schedule, a garden most likely will not live through its first summer. School staff, administration, community members and parents can help to make this happen!

\*adapted from the Master's Thesis of Jaime Zaplatosch, Openlands' Education Director

# BUILDING SCHOOL GARDENS

## National Gardening Association's Garden Lessons

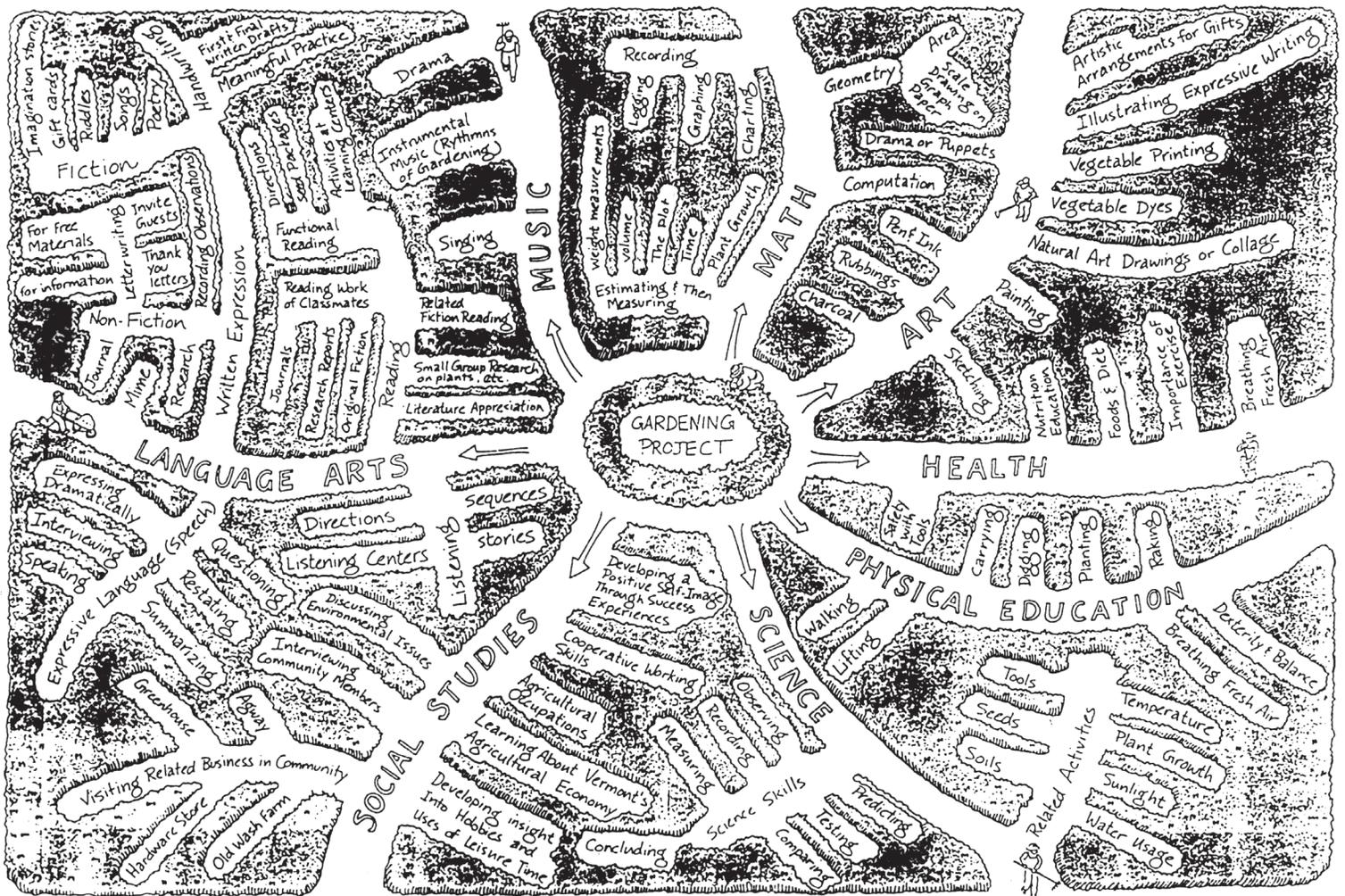


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### Gardening lessons continue all year long!

Here's one teacher's vision of how a garden project can send youngsters on the path toward almost any subject. Developed by teacher Vicki Greenhouse for her second and third grade students in Lincoln, Vermont.

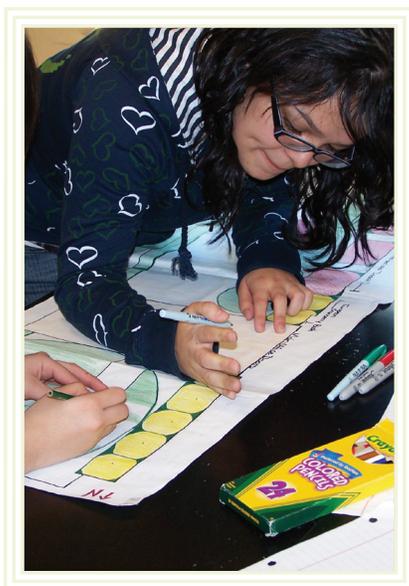
Provided by the National Gardening Association.





### What is a Garden Tracker?

Your school's Garden Tracker should be a "go to" manual that houses everything there is to know about your garden. It may be beneficial to have one working copy and an extra copy just in case the working copy gets lost, misplaced, or damaged. As material is added to the working copy a copy should be made for the extra copy as well. The Garden Tracker should be kept in an area that will be accessible to all of those who participate in the garden as well as for those who would like to learn about the garden.



### What should be included in the Garden Tracker?

- Building School Gardens Memo of Understanding
- A copy of the Schools Grant Application for Building School Gardens
- A List of the Garden Team and the contact information should be provided.
- The School's Garden Design, original plant list, etc.
- Information on the garden: when was it created, who was involved in creating the garden, etc?
- Records/ Observations of your garden (these records and observations can be collected from different sources, i.e. different classes, parents, community members
- Taking pictures is a great way to document the changes that have occurred in the garden.
- Reference materials - articles, magazines, book list and comments, any course materials

### What should be recorded?

A garden's success or failure can be identified through looking back to see what took place over the year (s). For example, are you wondering why your lettuce bolted before you were able to harvest it? If you look back in your records, you will see that you planted the lettuce too late in the spring. Keeping a record of the happenings of your garden will help you develop a stewardship plan.

You can record as much, or as little as you want; however, the more the better. Record keeping and observations can be a fun activity to incorporate into the classroom. Some information that would be beneficial to record is:

- planting dates for seeds and plants (when did you start them indoors/outdoors?)
- transplanting dates
- source and cost for plants and seeds
- weather such as rainfall, snowfall (Was there a blizzard?), frost dates,
- plant characteristics, date of germination, date they emerge in spring, appearance of blooms
- date of harvest (for vegetables) or cut flowers taken



- trash, vandalism/ graffiti
- check the infrastructure and recreational equipment: such as benches or other seating, tables, bike racks, play equipment, signage, fencing, etc.
- garden artwork- murals, sculptures, tiles, or other artwork
- condition of raised beds, paths, edging, mulch,
- condition of plant material-trees, shrubs, perennials, etc.
- pictures - throughout season or at peak bloom, included with plant detail or in separate section
- garden plan - to scale on graph paper, or drawn free-hand, laying out beds and plantings
- wish list - plants to consider for the future, possible architectural considerations like a pergola, hut, water feature or dry river bed, tools that are needed
- inspiration thoughts
- websites you like and why
- Any recipes from your garden harvest? Can you think of new ones?
- Supplier notes - which you like and which you don't; what brand of tools held up and what brand did not? Are the dollar store trowels really worth it?
- costs - like most projects it is wise to keep a tab on all your costs

*“No two gardens are the same. No two days are the same in one garden.”*

HUGH JOHNSON





### Student Involvement

Involving the students in the creation, installation, and stewardship of the school garden is a major component of the BSG Program. We believe giving students the opportunity to voice their ideas and opinions and participate in the creation of the garden not only gives them ownership of the garden but also strengthens their commitment to their education and the community as a whole. Openlands will work with some of the students during the installations days, however, it is up to the school and Garden Team to involve the remainder of the student body.

### Student Installation Days

Depending on the scope your school garden, the student installation days can include anywhere from 150 students (one installation day) to 450 students (3 installation days). Please see page 10 for more

detailed information about student installation days. This may cover all or almost all of your student population but if you have a large school, all students may not be involved.

### Planning

During the planning process, we encourage schools to gather input from the students. Ideas about where the garden could go, what the garden can look like, or features they would like to see should be gathered and shared when discussing the garden design. Once the type of garden(s) - edible, ornamental, native, or a combination - has been determined, the students can choose the plants that will be grown in the garden. Other ideas include: researching the plants that will be in the garden, creating a plant ID book specifically for your school garden, or making seed tape that can be used on planting day.

### Art

Incorporating an art component into the school garden is another way to increase the students' participation in the school garden. Students can create stepping stones, plant signs, garden signs, or other simple structures that can be displayed in the garden. Building a trellis can be a great art project and can also be used as a functional piece. Continually "planting" new art pieces is a great way to continue the momentum and excitement in the garden.

Links to investigate for more ideas:

<http://edibleschoolyard.org/resource/carrot-seed-tape-activity>

[http://www.schoolgardenwizard.org/wizard/pdf/learn\\_guide.pdf](http://www.schoolgardenwizard.org/wizard/pdf/learn_guide.pdf)

<http://blogs.cornell.edu/garden/get-activities/signature-projects/dig-art/activities/>

*“Students made pictures and designs of what they wanted to see in the garden. Students told their family members about the garden and asked for their support.”*

BUILDING SCHOOL GARDENS TEACHER



### Preparing for the day:

- Create a schedule where teachers can sign up to bring one class at a time. The ideal amount of time for a group to be out is 40-50 minutes.
- Recruit at least 3 additional adults to oversee small group work. Volunteers needn't be gardeners. Openlands staff will explain tasks to each group. They will assist in supervising and possibly some manual labor. We want the students completing the bulk of the work.
- A rain date should be scheduled.
- Remind students the day before to dress for outdoor weather and work. Yes, they will most likely be getting dirty.
- Openlands will provide all tools. Gloves will not be provided.
- Discuss with students the overall plan of the garden space. If available, share with them a plan/design of the garden. Ideally, it will be one they have helped design. This could also be posted in the classroom and brought outside on the work days.

- Discuss rules for effective safety (always walk, stay on paths, ask before using tools, and respect plants, animals, and each other, etc.)
- For some activities, incorporating mentors may be appropriate. Mentoring can be accomplished by pairing a lower-grade class with an upper grade. If mentors are used be sure a total of only 30 students are scheduled for each time slot.

### On the day of:

- Openlands staff will explain and demonstrate tasks. It is the teacher and volunteers' role to assist when the students break out into groups to work. Actual physical labor will depend on the groups' age. For example, teachers and volunteers will have to shovel mulch for younger students; whereas older students can shovel on their own while being supervised.
- Teachers should know that they are to actively participate. They are required to assist in supervision and may possibly be needed to perform physical labor. This is not a free period.



### Student Installation Schedule

Please follow the student installation schedule. You must bring your class outside and remain with them during the scheduled activity. Have students dress appropriately for their work day. Volunteers should be instructed to arrive a few minutes early and be prepared to work in the garden and supervise the children. Remember, only one class per time slot.

Time	Room #, Grade
9:45-10:25	333-6th*
10:25-11:05	332-4th*
11:05-11:45	340-4th*
11:45-12:05	lunch
12:05-12:45	322-6th*
12:45-1:25	329-3rd*
1:25-2:05	339-3rd*
2:05-2:45	346-4th*

\* Room numbers and grade levels above are included as examples only.

Times will vary according to your school's schedule.

It may be beneficial to have appropriate grades performing certain tasks. Such as, the older grades moving heavy soil and any grade moving lighter weight mulch. Please ask your Openlands staff person what tasks your students will be doing and in what order.

*“The greatest gift of the garden is the restoration of the five senses.”*

HANNA RION





Adding a school garden leads to additional maintenance - what we like to call stewardship - in order to sustain the garden. Many questions need to be answered: Who will be responsible for the watering of the garden? Who will weed the garden? Who will harvest the fruits from the garden? Openlands encourages each school to create a stewardship plan that includes the stewardship activities and the steward(s) that are responsible for each activity. Here are some samples of past BSG grantees stewardship plans:

### Sample 1 High School

During the school year (Fall and Spring), garden club students help water, harvest, pull weeds, tend garden during weekly club meetings. During the summer (this summer, 2nd year)- it's a challenge!! Originally, community members (7 teachers) agreed to commit to helping during summertime and school year. But because teachers have plans during summer and do not want to come to the school (plus, due to security, the gate toward the garden is not always open during summer and kids are not allowed to enter without teacher), the engineers or Main Office clerks turn on the sprinkler daily for an hour- so it would be watered. As club sponsor, I check on plants at least once/week this summer.

### Sample 2 Elementary School

The Garden Team has a team leader. The Garden Team leader will be in charge of managing the rotation of lead gardener duties (the class that has garden-care responsibility) from week to week during the school year and in creating a garden adoption schedule for the summer. He or she will also be in charge of setting monthly Garden Team meetings and communicating with the Garden Team by email.

Teachers at each grade-level will be responsible for the planning and implementation of a garden plan for their particular garden plot. Each grade level will be responsible for watering and caring for their plots throughout the growing season. We will share garden care responsibility by rotating lead gardener classrooms on a weekly basis. The classroom with lead gardener status for the week will need to take care of common elements—making sure everything is well-watered and weeded during the warm school months and that litter is picked up during the winter.

### Sample 3 Elementary School

Over the summer, we had families adopt a week. A box of tools and directions was created and was accessible for families. Families pick

this box up in the beginning of the week. An individual from the Garden Team sends out weekly reminders to the adoptive family to make sure we have it covered.

Once school begins in the fall, we will have the Green Club and certain classrooms be in charge of watering, weeding, and planting when necessary.

### Sample 4 Elementary School

The Garden Team has collected email addresses from parents who were interested in receiving updates on the Garden Project. As it got closer to the summer, these parents were emailed (a few times) requesting their help for the summer. Also, via the school, we sent out an email blast (a few times) with school news as well as a request for summer maintenance help. We also sent an email to incoming Kindergarten parents requesting their help. All together, we have 25 families helping, 2 high school students, a community member, and a home schooling family.

Families were asked to take a week & come out twice- preferably Tues & Th of the week. A schedule was compiled as well as an "On Call" list. The On Call list is used if extra work is needed, if weather shifts the schedule or if a family cancels.





### Mark Sheridan Academy Summer Stewardship

Please do the following:

- Harvest vegetables.
- Water raised beds.
- Weed & pick up litter in the perennial bed assigned to you.

If you have some more time, please consider doing the following:

- Pick up litter on the lawn or in the lunch table area.
- Weed a tree or two on the perimeter of the school grounds- watch out for dog poop.

**Thanks for your help!!!**

### Stewardship Details

In the Main Office, under the bench, you will find a container of gardening tools & Ziploc Bags (to take veggies home in). Also, you will find plastic gloves in case you forgot gardening gloves.

### Harvest Vegetables

#### “Peas Please” Raised Bed:

- To harvest the peas, hold the stem at the base/flower and pull out the pod. Look for pods that are at least

1” in length with lumps in them, indicating they are mature enough to harvest. To eat them you can shuck them or cook the entire pod like you would snow peas.

- There may be plenty of peas to pick for the first few weeks of summer. Then, the plants will die & we must take them out of the bed. Mrs. Keane plans on planting pumpkin seeds here for the Fall harvest.

#### Other Raised Beds:

- Any mature vegetable needs to be picked.
- Any green, leafy veggie can be picked to thin out the bunches- so leave some leaves behind but please thin out these bunches & enjoy a salad later. Harvest the medium to largest leaves by gently snapping them near the base.
- Any herb (cilantro, basil, etc.) can be trimmed for your use.
- During the early summer, please remove the small leaves on the tomato plants that are closest to the base of the plant. This will allow the plant to grow taller and direct it’s energy into producing yummy tomatoes.
- During the early summer, thin

out the square foot sections of the raised beds by pulling out some of the plants. You’ll need to use your best judgment here. That is, if its looking crowded, you can pull a few plants out. Otherwise, let them grow. Due to the way the seeds were planted, you may notice the odd vegetable in the wrong square or too many in one spot (basil or lettuce). It is OK to rearrange them into a more appropriate space. Wait until they are an inch or two high and then gently dig up and move them.

- If you see a plant with dead leaves, the dead leaves should be removed or the branch removed at the stalk. Just pinch them off. This way the plant directs its energy into the healthiest leaves.
- If in doubt if something is ready to harvest, move or remove, leave it for next time. You can send a picture with your cell phone with your question as well so the next family knows what to look for.
- Since this is an organic garden there will be no pesticides. Don’t worry about the bugs that you see eating the plants. Some of them are beneficial to the ecosystem.



### Water Raised Beds

The hose is located in the fenced in area in front of the school. The gate may be locked. Someone from the Maintenance Staff should be around from 7a.m.- 3p.m. each weekday. Please go in the school & ask in the office for someone from Maintenance to unlock the gate for you.

- Pull the hose all the way to the farthest bed
- Water each bed thoroughly - I suggest using the Light Shower setting on the nozzle

### Weed & Pick Up Litter in the Perennial Bed Assigned to You.

Please wear gardening gloves when weeding & removing litter. Also, your children should wear gloves & you should closely supervise them when it comes to litter removal.

Each Perennial Bed is labeled with a sign. There are 3 beds: A is along 27th Street & will be maintained by 2 high school students; B is on the east side of the space; and C is along the parking lot. MSA Families will maintain Beds B & C and I will alternate their maintenance week by week.

- Each perennial was planted in groups of 10 to 20. Thus, any plant within the group that does not look like the others (look at leaf shape, leaf arrangement, and flowers) is most likely a weed. If you are unsure, just leave it alone- it will get figured out eventually.
- There are a few plants out of place. That is, a lone plant that belongs in our Garden but is not planted with its group. These plants are a good size now. Please step back and look around and if you see a like plant nearby, leave this plant- it is probably not a weed.

- Most weeds can be removed by grabbing close to the plant's base & pulling. You want to get the root out as well as the rest. For many of our weeds, the roots are shallow.
- Some weeds (like dandelions) may require a weed popper to get the root out. There should be a weed popper in the container of tools in the MSA Office.
- I am leaving the clover alone as much of it is growing at the base of the plant & it would be too complicated to remove it w/o harming the plant. Plus, I like clover. :)
- Litter- please use caution when removing litter. Please supervise your children, and please make sure everyone wears gloves. Much of the litter is paper or plastic and cigarette butts (see Bed B) but please use caution.



### Mark Sheridan Academy

#### What to Expect & What to Plan for during your Stewardship Session:

- 1 For each visit, you should plan on staying at least an hour but if you have 2 hours to give for each visit, there is quite a bit to do. If you are a family that signed up for a specific week, Openlands suggests that you come on both Tuesday & Thursday of that week. This way, the raised vegetable beds receive consistent watering.
- 2 If it's possible for you to do the garden work during the day, that would be the preferred time as the Maintenance staff will need to help you with the hose and they are usually available from 7 - 3. If you can not get there during those hours, no problem- just let me know. I will contact someone on the On Call list to water for you, then you can do the other stewardship tasks when you arrive.
- 3 Here's what I recommend you bring with: gardening gloves; bucket to throw weeds in; plastic bags, Ziploc bags, or bowls to put veggies in; and a weed popper (the tool you use to pop dandelions out of your lawn). I did leave gardening tools & plastic gloves in the MSA Office if you forget or if you do not have any.
- 4 If it is raining on your assigned day you can skip work for that day but please let me know. If something happens & you can't make it on your assigned day(s)- no problem- but please let me know. In either of these cases (rain or emergency), you can either reschedule for the next day OR I can use the On Call list to get someone else out for the next day. Truthfully, we have a lot of volunteers (yay!) and I'd like to use all of you at least once this summer.
- 5 If possible, please email me or call me with a "report" on your Maintenance sessions. How did they go? Did something not get done? Did you do any extras? Is there something that needs attention next week? etc.
- 6 There is a Garden binder in the MSA Office if you need any of these attachments or if you want to see the plans for the Native Perennial Beds or the Raised Beds. We also have documents that describe each of our Native Perennials.
- 7 The number 1 goal for you & your family while you are out there is to have a nice day! :) Please enjoy the sun, the heat, the dirt, the plants and the company! While there, yes, please get some work done but, more importantly, enjoy it!



### Mark Sheridan Academy Garden & Outdoor Education Summer 2011 Stewardship Schedule

#### June

Week of June 20

(suggested maintenance days: Tues, 6/21, and Thurs, 6/23)

The Biggs Family

Week of June 27

(suggested maintenance days: Tues, 6/28, and Thurs, 6/30)

The Martin Family

#### July

Week of July 4

(suggested maintenance days: Tues, 7/5, and Thurs, 7/7)

The Zhao Family

Week of July 11

(suggested maintenance days: Tues, 7/12, and Thurs, 7/14)

The Ng Family

Week of July 18

(suggested maintenance days: Tues, 7/19, and Thurs, 7/21)

The Koronkiewicz Family

Week of July 26

(suggested maintenance days: Tues, 7/26, and Thurs, 7/28)

Tuesday, 7/26: The Worthington Family

Thursday, 7/28: Vidmar, Pascente, Scalise Families

\*This is continued for the month of August

#### On Call List

(I will email if help is needed.)

The Vohasek Family (Fridays & weekends)

The Worthington Family (August)

The Sykes Family

The Koronkiewicz Family

The Vazzana Family

The Bartucci Family

The LePretre Family- Week of 7/18 through 1st week in August

The McEwing Family- Week of 7/18 through 1st week in August

The Cozzi Family (last 3 weeks of August)

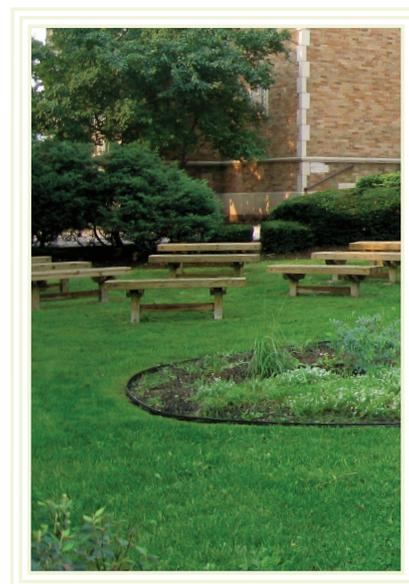
#### More Helpers

(scheduled for Tuesday mornings, throughout the Summer)

Moesha & Benedicta from DeLaSalle High School

The Lewis Family (Home Schoolers) & The Coleman Parks Family (MSA Family)

Karen Roddie (community member)





### Ribbon Cutting Celebrations

School garden ribbon cuttings are a great way to show off your work to the community and celebrate all that has happened on your school grounds in a (relatively) short while. Aside from the new garden, you have a lot to highlight at your school. Share all that you can while bringing people together who are past, current and possible future supporters.

What to consider when planning your ribbon cutting:

- Develop a goal with your Garden Team for the ribbon cutting. What do you want to achieve?
- What attendees should be invited? Administrators, politicians, community members, community organizations, family and friends of the garden, local newspapers, etc. are all possibilities. Your list of attendees and when they are available may determine when the ribbon cutting will take place.
- Date and Time. Your school's overall goal may determine when the ribbon cutting will take place. Ribbon cuttings have been combined with school events such as fundraisers, open houses, and other school celebrations. Your school garden's ribbon cutting could be a stand-alone event during the school day, after school, or on the weekend.
- How will people be notified of your event? Student created invitations like the one from Kelvyn Park High School, below, are great ways to promote the importance of student-involvement in the garden.
- Set up a program of the event schedule: welcome and introductions, speeches, ribbon-cutting, recognition of contributors and closing. Students can participate by: having the school choir, band, or a dance class perform; speaking about their experience; taking the role of greeters, ushers, servers, etc. Hopefully your ribbon cutting will take place in the garden, but how will the event be set up? Is there a stage? Do you need electricity? Are there enough seats for all of the invited and honored guests?
- Ribbon and scissors to cut the ribbon are a must! What other supplies do you need?
- Once the ribbon cutting is over, be sure to send a thank-you to those that attended the event!





### After installation

Once the plants are planted, proper watering is the most important part of the plants' survival. Plants need to be watered as soon as they get in the ground. For our purposes, water when the classes are finished planting. If there is an area that is complete, someone can begin watering if classes are still planting.

Please be aware that watering takes time; we should not just sprinkle the plants and the top level of soil. We should soak the soil surrounding the plant. It is crucial to know how to water and to explain to others how to properly water. Spraying the plants for a few seconds will do absolutely no good - the plants need to get soaked at their base. The leaves, stems and flowers of a plant don't need to be watered at all; their roots do.

Recall how deep the plants were planted into the ground -that is how deep the water needs to go. The soil surrounding each plant needs to be soaked thoroughly until it is fully saturated. Apply water to the base of the plant slowly and repeatedly to allow time for it to soak into the ground. Please be careful not to have the water pressure too high so that you don't wash away the soil and mulch. A shower nozzle for the hose is a great investment.

### The plants are in and have been thoroughly watered. Now what?

Plants that have been recently planted are only able to absorb water from a small area around them. Therefore, they need to be continually watered on a daily basis for at least the first

week. Again, this watering should be a thorough soaking. To if you are watering long enough, use a yard stick and insert it into the soil as deep as the plant's roots. If you pull the yard stick out and the soil is attaching to the stick, then you have watered thoroughly. This technique is very similar to sticking a toothpick into a cake to see if it done.

After the first week, you can decrease watering to every other day and then slowly decrease from there. Of course all watering will be dependent on actual rainfall and the weather, such as amount of sun and wind that removes water from the soil. If you are unsure about watering, do the yard stick test and decide from there. Happy watering!

*"Gardening requires lots of water - most of it in the form of perspiration."*

LOU ERICKSON





### Watering

Once the plants are in their garden beds, proper watering is critical to the plants' survival. Plants need to be watered as soon as they get in the ground. For our purposes, watering should occur after classes are finished planting. If there is a bed that is completely planted, someone can begin watering that bed while others are being planted.

Watering takes time and sprinkling is not sufficient. The soil surrounding the plant should be soaked, not the plant. It is crucial to know how to water and to explain to others how to properly water. Spraying the plants for a few second will do absolutely no good - the plants need to get soaked at their base, beyond the top inches of soil. The leaves, stems and flowers of a plant don't need to be watered at all; their roots do.

### Watering Vegetable Beds

Just as plants have different sunlight requirements, they also have different water requirements. Vegetable plants are going to require deep watering at least every other day and in some cases - on very hot or windy days - they may require water every day. Soon after the plants are in the beds, they should be watered. Be careful not to have the water pressure too high. This can wash away the soil; use a shower nozzle if possible.

For seeds, the soil around the seeds should be damp; not water logged. Be careful, not to flood the area that you just seeded because the seeds may be moved from their intended locations by the water. Depending on the size of the area that was seeded, a spray bottle or a misting wand may be the best way to water for the first few days. Once the plants are established, it is best to continue watering at the base of the plants near its roots because that is where the plants need it!

Water plants in the beginning of the day so that they dry before evening. This helps prevent diseases from developing. If you are not sure if your garden needs water, use an old trick: put your finger into the soil. If the top half-inch of soil is dry, you need to water!

### Watering in-ground plantings

All plants need deep watering to get established after their initial planting. Recall how deeply the hole for the plant was dug in the. The soil surrounding each plant needs to be soaked thoroughly until it is fully saturated, to the bottom of the roots. Apply water to the base of the plant slowly and repeatedly to allow time for it to soak into the ground. Please be careful not to have the water pressure too high, as this can wash away the soil and mulch. A shower nozzle for the hose is a great investment.

Plants that have been recently planted are only able to absorb water from a small area around them. Therefore, they need to be deeply watered on a daily basis for at least the first week. To see if you are watering long enough, use a yard stick and insert it into the soil as deep as the plant's roots. If you pull the yard stick out and the soil is attaching to the stick, then you have watered thoroughly. This technique is very similar to sticking a toothpick into a cake to see if it done and can be a great way to let your students take the lead on determining water needs.

After the first week, you can decrease watering to every other day and then slowly decrease from there. Of course all watering will be dependent on actual rainfall and the weather, such as amount of sun and wind that removes water from the soil. If you are unsure about watering, do the yard stick test and decide from there. Happy watering!

### Garden Extension Activity: Make your own Rain Gauge

Place glass or plastic jars out in the garden to collect the next rainfall. When it stops raining collect the jars and use a ruler to measure the amount of water collected. Record the amount of rainfall in your Garden Tracker.



### SOIL COMPACTION

#### Caution! Beware of Compacting your Garden's Soil

Soil is most vulnerable to being compacted when wet. Walking over a garden plot repeatedly can cause the underground tunnels and air pockets to collapse or compact. This makes it difficult for the plants' roots and soil organisms to get the air and water they need. Soil compaction also makes it difficult for water to move through the soil and to drain properly.

#### How to Avoid Compacting the Soil

- Avoid all unnecessary foot traffic in the garden beds. When designing a garden, lay out the garden with permanent pathways. The pathways may compact, but not the growing space.
- Avoid stepping directly into the garden when weeding. Work from the side of the garden bed and limit the amount of time walking through the center of the garden.
- After weeding, cover bare soil with mulch. Heavy mulch forms a sort of cushion to lessen compaction.

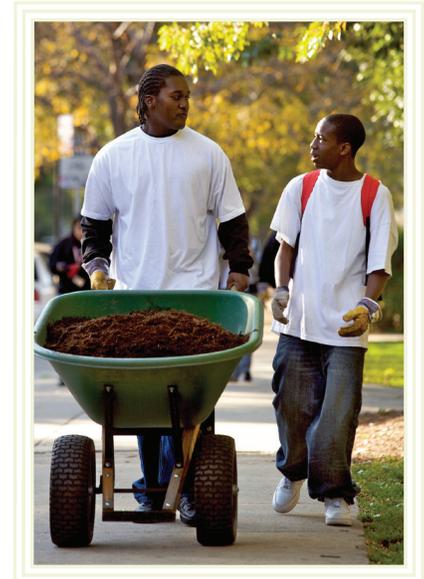
### MULCHING

#### What is it?

Mulching is spreading a thick layer (3-4 inches) of wood chips, leaves, straw, grass, or compost on the surface of the soil or around plants.

#### Why Mulch?

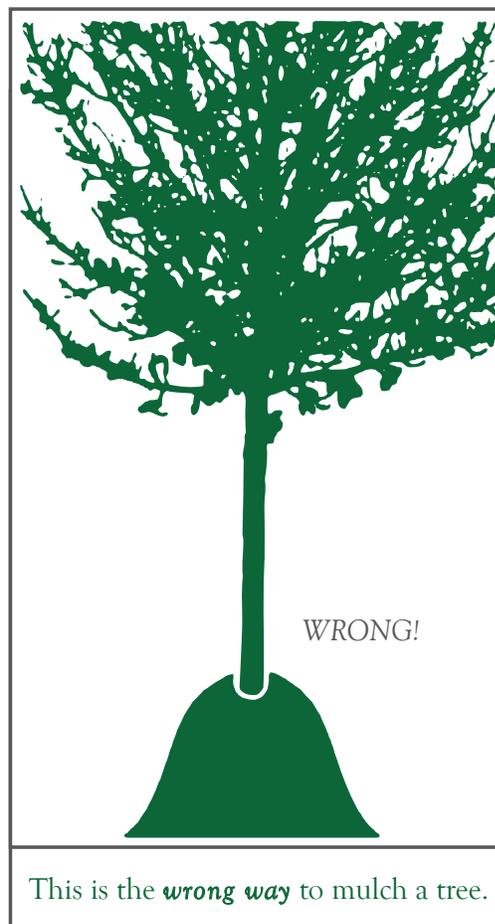
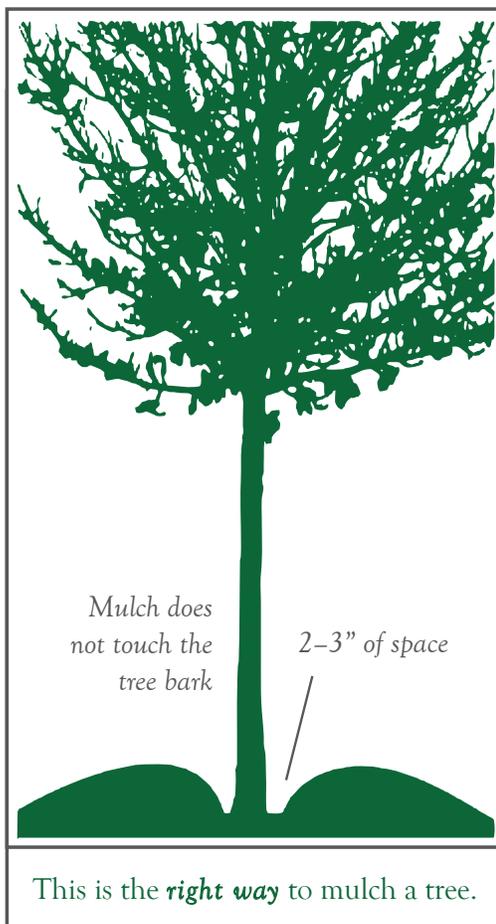
- Mulch controls weeds by covering ground and keeping the weed seedlings from getting sun.
- Mulch moderates soil temperature. It keeps soil cooler in summer and warmer in winter.
- Mulch conserves moisture, allowing your garden bed to be watered less.
- Mulch prevents soil erosion by holding soil down so it cannot be blown or washed away.
- Mulch keeps vegetables and fruit such as strawberries clean. They are lifted off the soil on a thick layer of straw or leaves.
- As the mulch breaks down each year, it supplies the plants and soil organisms with a layer of soft, rich organic matter.





Use wood chips for mulch. The chips may be up to 4" deep. Pile them in a donut shape around the tree, making sure that they do NOT touch the bark. There should be a space of 2-3" at the base of the tree.

Volcano mulching may severely damage your tree. Mulch or soil must never be piled against the tree trunk. Why? Because it will rot the bark and/or allow insects and fungus to attack the tree.



This message is brought to you  
by Openlands and the City of  
Chicago Trees Initiative





- **Water your trees:** During hot, dry periods, water your trees with 15 to 25 gallons of clean water per week. This is the equivalent of running a slow running hose near the base of your tree for 30 minutes, filling a five gallon bucket with holes in the bottom five times throughout the week or filling a 15 to 25 gallon watering bag installed around your young tree once weekly. Do not pour used cleaning water on your trees.
- **Avoid mulch volcanoes:** Apply mulch three inches deep, three feet wide per inch of tree diameter for newly planted trees or as wide as the branch spread for mature trees. Pull mulch back three inches from the base of the tree. Piling mulch against the trunk of your tree creates a dark moist habitat for rodents, bugs, bacteria and fungus to attack and potentially kill your tree.
- **Guard the bark:** Avoid tying or otherwise attaching signs or decorations to trees. Do not allow anyone to chain their bike to your trees. Keep lawn mowers and weed whackers away from the base of your tree. Any damage to the bark can ultimately kill your tree.
- **Keep it clean and clear:** Your tree's roots extend past the branch spread. Do not install flower beds or turf in the root zone of your tree. Do not place large heavy objects in the root zone. Both can damage roots as well as prevent oxygen and water from getting to the roots, which can ultimately kill your tree. If you have a newly planted young tree, remove the turf and any weeds surrounding your tree as its branch spread increases. Do not allow pets to use the area around your tree as a bathroom. Keep the area around your tree free of litter.
- **If you must plant:** Plants with root structure similar to trees may be planted in the root zone by digging small holes in the outer two-thirds of the branch spread of a mature tree. These include shade-loving bulbs, wildflowers, ferns, ground covers and other herbaceous perennials.
- **Don't change the grade:** Adding soil or other organic matter, including compost, in excess of two to three inches in the root zone of your tree can smother the roots and ultimately can kill your tree. Conversely, do not remove soil or otherwise rototill/dig in the root zone of your tree.
- **Keep chemicals away:** Common herbicides and weed killers can damage and kill your trees, in addition to being unhealthy for humans, pets and wildlife. Avoid their use in your lawn.
- **Skip the salt:** In the winter, use non-sodium sidewalk salt with calcium chloride. Sweep excess salt to the curb and not into the soil.
- **Learn more:** You can learn much more about caring for your trees and the trees in your neighbourhood through Openlands' TreeKeepers Program (check out our website for more information [www.openlands.org](http://www.openlands.org))
- **Call for help:** If your tree looks sick, shows evidence of pest infestation, has limbs that need to be pruned or otherwise needs help, contact a local tree care firm certified by the International Society of Arboriculture (ISA) or approved by the Midwest Ecological Landscape Association (MELA). Initial assessments and cost estimates are usually free.



### Weed Control

Weeds are plants that are in the wrong place or just a plant that nobody wants in a garden. They can be a real problem and even kill the “good” plants a gardener wants to keep.

You can identify weeds either by being familiar with their leaves

or flowers (like a dandelion, for instance) or by process of elimination: remind yourself or be sure to ask the gardener where the plants are that they want to keep! Anything that is coming up that is not where and what the gardeners have planted is a weed!

Another clue is to look around and see if a particular plant is coming up all over the place. Since the gardener probably did not plant their special annuals or perennials “all over the place” those plants are probably weeds.

### Hints and tips for controlling weeds without chemicals:

**1. MULCH, MULCH, AND MORE MULCH.** Continuous replacement of mulch will cut down on weeds significantly, but not entirely. Be careful not to mulch too thickly or pile mulch high up against plant stems and trunks, because it can cause plants to rot by holding too much water on the surface of the plant or in the roots. Also, make sure that mulching materials are well-composted prior to putting them around your plants so that they don’t bring along unwanted invaders. (Use manure, newspaper shreds, grass clippings, leaves, straw, etc.) As an alternative, sheets of black

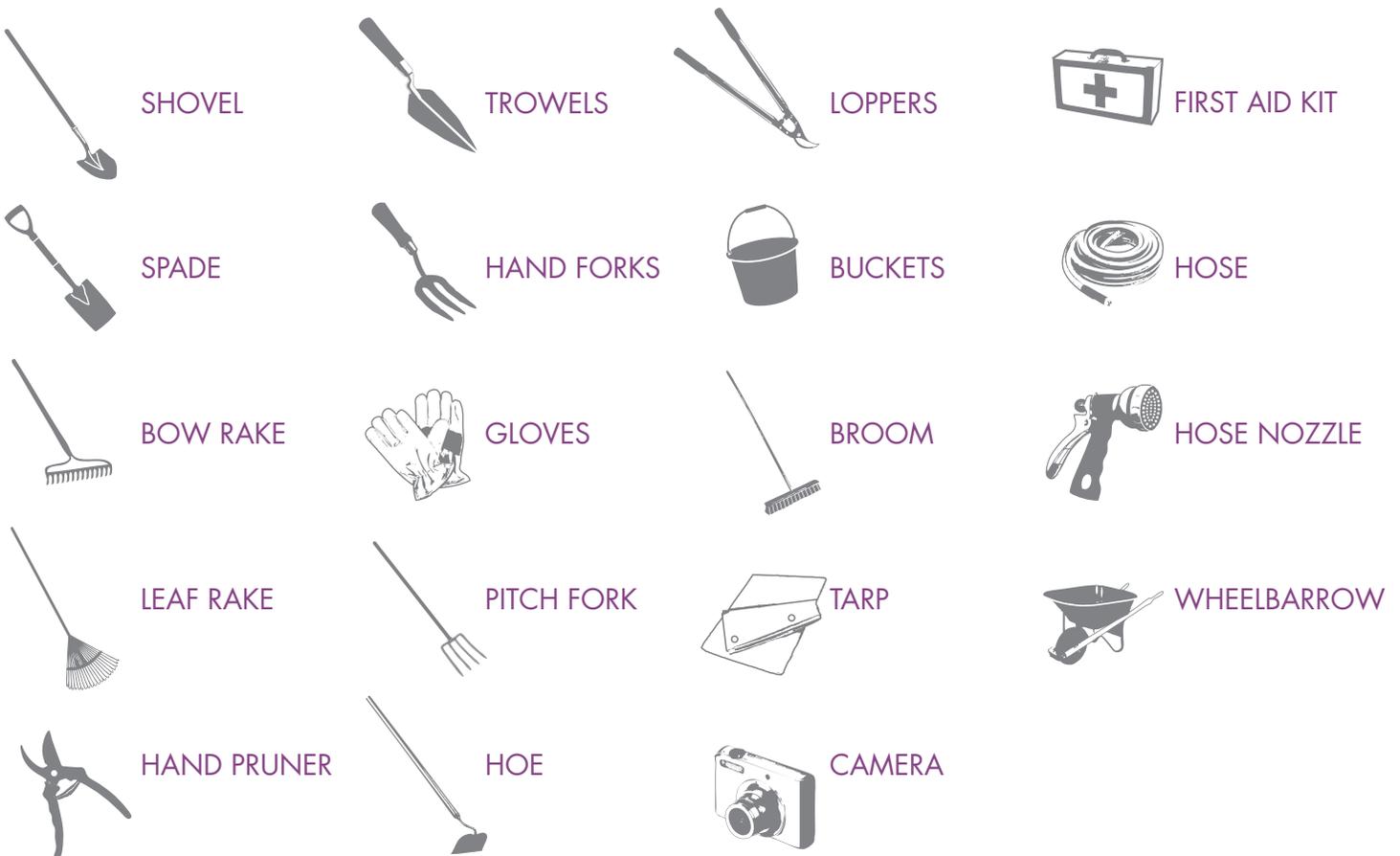
polyethylene can be laid out between rows or over entire beds, with slits cut for growing plants.

**2. REMOVING WEEDS BY HAND.** Hand weeding will help ensure that the plant receives enough moisture and doesn’t have to compete for nutrients. And you won’t have to use chemicals when you use your hands! When pulling out or digging up plants by hand, be very careful to get as much of the root as you can ~ don’t just snip off the top. Otherwise, the roots will continue to grow and a nicely weeded plot will be overgrown again within the week! Some plants are easily pulled out with

the entire root; others may require a lot of digging, so use a weeding tool. Also, watch out for plants, especially vine-like plants that produce roots as well as stems horizontally, growing out into the earth around them – try to get ALL those roots, too. And finally, don’t weed right after rain or watering. Wait for the soil to dry out first to prevent spreading diseases and ruining your soil. Working wet soil can make it compact and hard.



Common Tools that may be needed in your school garden:



Caring for your tools will not only keep your tools working properly but it will also extend the life of your tools. It is recommended to clean your tools after each use.

- Wash off all sap, soil, or other organic material
- If there is rust on a tool, you can remove it with coarse sandpaper and steel wool
- Metal parts can be wiped with a rust inhibitor such as WD 40 or a petroleum based lubricant
- Wooden tools should be rubbed with linseed oil; this prevents them from drying out and splitting
- Over the years, tools may need to be sharpened
- Be sure the storage area for your tools is out of the elements and in a dry place.



### JANUARY

- Pick up trash. Take some pictures.
- Start to plan what to plant in the spring. Things to plan for: annuals, more perennials, shade/sun needs, quantities needed for each bed.
- Create a garden calendar for the new year. This is a great time to plan out garden tasks and assignments as well as scheduling stewardship days, picnics, performances, etc
- Seed/ plant catalogs should be arriving. Begin creating wish lists.
- Have we been hit with a heavy snow? Snow and ice can be GENTLY removed from evergreens and shrubs to prevent damage.
- Document happenings. Can you see any evidence of animals visiting the gardens? Check for animal tracks in the snow.

### FEBRUARY

- Pick up trash. Take some pictures.
- Continue planning and order materials decided upon. Seed lists should be narrowed down and seeds can be ordered.
- Will there be any other materials or tools that you will need when planting times arrives?
- Speaking of tools: Were you able to

inspect and clean your tools when you put the garden to bed? If not, get to it (See Caring for your tools page)

- Document happenings. Is there anything new to report in the garden?

### MARCH

- Pick up trash. Take some pictures.
- Getting the itch to get outside in the garden. Be careful not to get out their too early. If the ground is wet, all the feet walking around the garden area will compact the soil, which we do not want for our garden.
- Instead get the students interested by starting some seeds indoors. Cool season crops can be started indoors now. Not growing veggies or herbs? You can start some annuals like impatiens, ornamental kale, or sweet pea.
- Got Trees? Mid February through the beginning of May is the best time to prune trees. March is the also the month for maple syrup making; the sap is flowing.
- Got Grasses? Grasses that were left for winter interest can be given a haircut this month.
- What's that flower? Some bulbs may begin to peek out and flower

for you. Jot down on your map where the bulbs are located.

- What else is stirring in the garden?

### APRIL

- Guess what? It is time to pick up trash and take some pictures
- Clean and rake out beds as weather permits
- Adjust beds: re-define edges of wood or stone or clean and dig around bed.
- Add compost and mulch to perennial beds. Work it in gently or just spread it around plants.
- Add compost to annual beds and when soil is dry (will NOT stick together in a ball when you pick up a handful and squeeze it), you can work the compost into the bed with a hoe, a spade or a rototiller.
- Plants can be started indoors by the first of the month to be ready in six weeks for planting. Cool season crops can be planted directly into the garden.
- Bulbs can be deadheaded and some perennials can be divided (Be sure to know the plants in your garden and research when is the best time to divide them. Some are best divided in spring, and some are best divided in fall).



- WEED - if this is done now, you will really be on top of the weed problem.

### MAY

- Pick up trash. Take some pictures.
- Plant the new annuals and perennials on or after the 15th of the month. This is the official last freeze day in Chicago.
- More veggies can be planted into the garden.
- Water as necessary: (1). Right after new plants go in and (2) enough to equal at least 1" per week. If ground is dry and cracked, or plants appear wilted it is time to water. Watering should be done slowly so soil doesn't wash away and puddles don't form. A back and forth motion of a hose or a drip-hose is the best technique. Don't forget the trees when the weather has been very dry - a 30-minute watering with the hose inside the "drip-line" of the tree is ideal in a drought.
- WEED - every little bit keeps the problem under control
- Do we have a garden maintenance plan for the summer? Who will care for the garden when school is on break?
- Document happenings. What has

been going on in the garden? What stewardship activities have been completed? Has anything been planted?

### JUNE

- Pick up trash. Take some pictures.
- Add mulch as necessary to help keep moisture in and weeds down. Grass clippings, compost, wood chips can be used as mulch
- Pinch mums back to about 8-10 inches to encourage compact bushy plants with lots of flowers.
- "Dead head" plants, or remove old flowers to encourage more flowers to bloom.
- Water as needed, trees included
- WEED - Seems like it never ends!

### JULY - AUGUST

- Pick up trash. Take some pictures.
- Water as needed, depending on rainfall, which is usually low these months.
- If vegetables have been planted in the beds, you could start harvesting by now. Fall crops can begin to be planted as well.
- WEEDING is at its peak time so good yanking is important now, but if you have been good about this all along, it shouldn't be a

huge problem. Be sure to get those roots.

- Bulb catalogs should be arriving on your doorstep. Plan for your fall planting of bulbs.
- Keep gardens well mulched to decrease weed growth & to keep plants moist and cool.
- Continue adding to your compost pile.
- Continue to document what is happening in the garden? Have you harvested any vegetables or herbs? Are there any plants in bloom?

### SEPTEMBER

- It is time to pick up trash, take pictures of the garden, and document garden happenings in the journal.
- Continue with the general stewardship activities.
- If vegetables are part of the garden, it's time to complete harvesting and then to remove the plants.
- This is a good month to start a compost pile or a bin to put the garden refuse in and the leaves, too, that will soon come down. Then you will have your own constant supply of good compost fertilizer for the garden in the spring.



- Got herbs? You can dig up the herbs and bring them indoors for the winter. Be sure to give them a good shower to avoid bringing in any hitch hiking pests. Some herbs can be dried for future use in crafts.
- Take stem cuttings. You can take cuttings of various plants to overwinter indoors for next year. Some good ones are coleus, impatiens, geraniums, and phlox.

### OCTOBER

- Pick up trash. Take some pictures.
- Continue general maintenance such as cleaning up trash and litter, pulling weeds, and removing dead plants to the compost pile.
- This is the best month to divide and replant perennials and to plant spring-flowering bulbs. Remember to document where the bulbs were planted.
- Water newly planted trees and shrubs regularly to encourage good root development and winter protection.
- Spread compost/mulch over the beds and they will be in very good shape for spring.
- If you have been keeping notes on your garden plan over the

growing season, good for you! If you have no garden plan this is a good time to start one. Go out to the garden and using a sturdy piece of cardboard or paper, draw a diagram of the garden beds and make a note of where everything was planted and how successful everything was this season. This will be very helpful next winter when you start to plan for the next growing season.

- Leaves are falling. If possible mulch leaves and use as mulch for your garden beds. Leaves can also be added into your compost pile.

### NOVEMBER

- It that trash I see? Pick up trash, take pictures, and use that journal!
- Time to put the garden to bed
- All the spent plants should be removed from the garden in an effort to prevent disease. Chop them up and add them to the compost pile.
- Tools should be cleaned and organized. A tool inventory is a great way to keep track of your tools and to see what tools are needed for next year.
- Be sure the gardens have a nice helping of mulch to protect them from the cold.

- If you brought any plants indoors be sure to check them and water them.

### DECEMBER

- This will be the last month to pick up trash and take some pictures.
- This is a good time to reflect on the past year. Look at the pictures that were taken over the year and read through the journal. What worked? What didn't work? Debrief the garden year with the Garden Team.
- With the garden work at a lull this month, this would be great opportunity to recruit more teachers, faculty, and parents to join your Garden Team. Have a gathering to showcase your garden (those pictures you have been taking will come in handy). It's a great time to recruit new volunteers as well.
- You can rest now as you wait for the seasons to turn again. You have earned it!

### HAPPY GARDENING!



### Green Teacher Network

Green Teacher Network (GTN) is an innovative collaboration between Openlands, the Garfield Park Conservatory Alliance, and the Chicago Botanic Garden that presents plant-related, standards-based lessons over a broad spectrum of subjects.

Educators with any level of gardening experience will benefit from this rich resource of green activities, including:

- Workshops led by leaders in the green teaching field, lessons for the classroom, networking opportunities, and more (each meeting includes refreshments, gifts, and raffle prizes);
- Workshop admittance for interested parents, volunteers, and

other teachers at your school;

- An opportunity to learn more about school gardening, plant science, and community building;
- Membership on the GTN listserv; and
- Continuing Professional Development Units (CPDUs).

### How to subscribe to Green Teacher Network mailing list/listserv:

1. Send an email to [chicagolandgreenteacher-subscribe@yahoogroups.com](mailto:chicagolandgreenteacher-subscribe@yahoogroups.com) from your preferred email address.
2. Receive the confirmation email titled "Yahoo! Groups: Welcome to chicagolandgreenteacher. Visit today!"

3. If you don't see this email within an hour or two, check your spam inbox.

4. Click "reply" to this email, and then click "send" without adding/deleting anything to the message.

5. You should receive another email titled "Request to join chicagolandgreenteacher approved."

6. If you don't see this email, check your spam inbox (and un-mark the email as spam, otherwise our emails will end up there in the future!)

7. If you still don't see it, contact Jaime at [jzaplatosch@openlands.org](mailto:jzaplatosch@openlands.org) to be added to the list manually.

*Don't judge each day by the harvest you reap, but by the seeds that you plant.*

ROBERT LOUIS STEVENSON





For a PDF download of all Green Teacher Network Resources including links to download resources and network websites, please visit [openlands.org/resources/GTNResources.pdf](http://openlands.org/resources/GTNResources.pdf)

### Green Teacher Network Garden Curriculum Resources

Access Nature. National Wildlife Federation. 2001. ISBN: 0-945051-72-7. \$39.95

Beyond the Bean Seed: Gardening Activities for Grades K-6. N.A. Jurenka & R..J. Blass. 1996. ISBN 1-56308-346-9.

Bottle Biology: An idea book for exploring the world through soda bottles and other recyclable materials. Kendall/Hunt Publishing Co. 2003. ISBN: 978-0-7575-0094-7

The Budding Botanist. (Grades 3-6) AIMS Education Foundation. PDF Version. [WEBLINK](#) Cultivating a Child's Imagination Through Gardening. By Nancy Allen Jurenka and Rosanne J. Blass. 1996. ISBN: 1-56308-452-X.

Digging Deeper by Joseph Kiefer & Martin Kemple. 1998. ISBN 1-884430-04-X. \$19.95.

Field Detectives: Investigating Playground Habitats. (Grades 3-6)

AIMS Education Foundation. 1998. ISBN: 1-881431-74-6.

French Fries and the Food System: A year round curriculum connecting youth with farming and food. By Sara Coblyn. ISBN 09703530-0-6.

Garden Detectives. Community Environmental Council. 2000.

Growing in the Garden. [WEBLINK](#) Iowa State University Extension. 2000. \$49.95

Healthy Foods From Healthy Soils By Elizabeth Patten and Kathy Lyons. Tilbury House Publishers. 2003. ISBN: 0-88448-242-1. \$19.95

Junior Master Gardener Series:  
• JMG Teacher/Leader Guide. Texas A7M University Press. 1999. ISBN: 0967299012 \$49.95

• JMG Level II. Texas Agricultural Extension Service. 2002. ISBN: 0-9672990-9-8. \$39.95

• JMG Health and Nutrition from the Garden. Texas Agricultural Extension Service. 2001. ISBN: 0967299071 \$29.95

• JMG Literature in the Garden. Texas Agricultural Extension Service. 2005. ISBN: 978-0-97210449-2-0 \$35.00

• JMG Wildlife Garden. Texas Agricultural Extension Service. 2004. ISBN: 0-9712612-2-9 \$39.95

Kids Gardening.org. A resource of the National Gardening Association.

[WEBLINK](#) Lesson and activities search.

Prairie School Project. Forest Park Nature Center and the Peoria Park District. 2005. Phone contact: 309-686-3360.

Project Food Land & People-Resources for Learning. 2000.

[WEBLINK](#) \$50.00

Project Learning Tree. American Forest Foundation. 1993.

Rainforests: Tropical Treasures (A Ranger Rick's Nature Scope book) Learning Triangle Press. 1997. ISBN: 007046510 \$12.95

Schoolyard Habitats. National Wildlife Federation. 2001. ISBN: 0-9450051-69-7. \$39.95

Seeds of Change: Learning from the Garden By Judy Mannes and Marcha Rehns. Dale Seymour Publications. 2001. ISBN: 0201495406 \$13.95

Slugs, Bugs, and Salamanders: Discovering Animals in Your Garden. By Sally Kneidel. Fulcrum Kids Press. 1997. ISBN: 1-55591-313-X. \$18.95

Steps to a Bountiful Kids' Garden. National Garden Association. 2001. ISBN: 0915873427. \$12.95

Tree School: Beyond the Sciences - Connecting Youth and Trees. 2008. Available at [www.openlands.org](http://www.openlands.org)

Worms Eat Our Garbage. By Mary Appelhof. Flower Press. ISBN: 0-942256-05-.



### Chicagoland Curriculum Alliance for the Great Lakes

[WEBLINK](#)

[Great Lakes in My World](#) \$43.25

### Chicago Botanic Garden Educational Publications

[WEBLINK](#)

[Garden for Life](#) publications - \$2 each, 3 for \$5

[Green Connections: A Research Assessment of Community Gardening in Chicago](#) \$10

[Plant Facts](#) publications \$2 each

[Summer Science: Reaching Urban Youth Through Environmental Science](#) - \$15

[The Chicago School Garden Initiative: A Collaborative Model for Developing School Gardens That Work](#) - \$15

### Chicago Children's Museum

[WEBLINK](#)

Lesson Plans with connections to Illinois Learning Standards (grades PreK-3)

[Clay Exploration](#)

[Drawing from Nature](#)

[Glove Gardens](#)

[Wonder Underground](#)

### Chicago Foundation for Education [WEBLINK](#)

A variety of lesson plans created by the Chicago Foundation for Education's grant-winning teachers

### Chicago Public Schools approved Inquiry Units [WEBLINK](#)

[WEBLINK](#)

Used in approximately half of CPS elementary schools:

#### K-5

[Full Option Science System \(FOSS\)](#)  
Delta Education

[Science, Technology and Children \(STC\)](#) Carolina Biological

#### 6th

[Investigating Earth Systems \(IES\)](#) It's About Time.

#### 7th

[Science and Life Issues \(SALI\)](#) Lab-Aids

[SEPUP](#) program (Science Education for Public Understanding Program)

#### 8th

[Issues, Evidence, and You \(IEY\)](#) Lab-Aids

[SEPUP](#) program (Science Education for Public Understanding Program)

### Chicago Wilderness

[Illinois Biodiversity Basics](#) [WEBLINK](#)  
(grades 5-8)

[Mighty Acorns](#) [WEBLINK](#)

[The Atlas of Biodiversity](#)  
[WEBLINK](#)

### Chicago Zoological Society

[WEBLINK](#)

#### Videos:

[Chicago Wilderness](#) \$10

[Wildlife Prairie Park](#) \$10

#### Curriculum Units:

[Ecosystems on the Edge](#) - \$50.00  
(grades 6-8)

[Nature's Filter](#) - \$50.00 (grades 9-12)

[Wonders of Our Wetlands](#) - \$50.00  
(grades 4-6)

#### Activity Sheets: [WEBLINK](#)

[Home Is Where Habitat Is](#) (p. 6-7)

[Feature Finding Mission](#) (p. 8-9)



### Earth Partnership for Schools

(K - 12) A partnership between the University of Wisconsin - Madison Arboretum, Chicago Botanic Garden, The Field Museum, and DuPage County Forest Preserve.

- EarthTeaching Newsletter [WEBLINK](#)
- Rain Garden Curriculum [WEBLINK](#)
- Restoration-Based Activities for the Classroom [WEBLINK](#)

### The Field Museum

#### Educator guides for exhibits

(grades 3-12), connections to Illinois Learning Standards [WEBLINK](#)

- [Nature in Chicago Walk](#)

#### Other Curriculum Resources

[High School Transformation Project: Science Content Foundation to Build Inquiry](#) (biology & chemistry) [WEBLINK](#)

[Science in Action for Conservation](#) [WEBLINK](#)

[Field Museum Educator Guides](#) [WEBLINK](#)

[This Old Habitat](#) [WEBLINK](#)

[Underground Adventure](#) [WEBLINK](#)

### Friends of the Chicago River

Curriculum [WEBLINK](#)

[Exploring Rivers](#) (grades K-4) \$35

[River Citizen](#) (grades 5-8) \$35

[Rivers Curriculum](#) (grades 9-12)

\$90

Individual Lesson Plans - Categories [WEBLINK](#)

Chicago River Science Lessons

Chicago River History Lessons

Michigan Avenue Bridge Lessons

General Ecology and Geography

Lessons

Taking Action Lessons

Background Information Sheets

[WEBLINK](#)

Lending Library of Books [WEBLINK](#)

Equipment for Loan [WEBLINK](#)

### Illinois Department of Natural Resources

Activity Books [WEBLINK](#)

Lesson Plans & Activities on CDs

[WEBLINK](#)

[Kids for Trees](#)

[WEBLINK](#) (grades K-3)

[Wild Mammals of Illinois](#)

[WEBLINK](#) (grades 4-6)

Trunks for Loan

[WEBLINK 1](#) [WEBLINK 2](#)

History Lessons with Natural Resource themes [WEBLINK](#)

[River Otter Adaptations](#)

[Too Many River Otters?](#)

### John G. Shedd Aquarium

[WEBLINK](#)

Activity guides with connections to Illinois Learning Standards

[Amazon Connections](#) (grades 3-5)

[Coral Reefs](#) (grades 3-5)

[Fishes](#) (grades K-8)

[Oceans](#) (grades 6-8)

[Penguins](#) (grades K-3)

[Sharks](#) (grades 3-5)

### Multidisciplinary Agricultural Integrated Curriculum (mAGic)

[WEBLINK](#)

University of Illinois (grades 4-8)

Illinois customers may call 1-800-345-6087 for subsidized prices from the Illinois State Board of Education.

[Dairy mAGic Kit](#) - \$272.50

[Illinois mAGic Kit](#) - \$500

[Insect mAGic Kit](#) - \$350.25

[Machine mAGic Kit](#) - \$351.50

[Plant mAGic Kit](#) - \$384.25

[Poultry mAGic Kit](#) - \$150.50

[Soil mAGic Kit](#) - \$403.25



### Museums and Public Schools – MAP [WEBLINK](#)

Chicago Public Schools and museum educators curriculum, connects with the Illinois Learning Standards

The Art of Survival – Theme 1 (grade 4)

Urbs in Horto (City in a Garden) – Theme 2 (grade 3)

### Museum of Science and Industry [WEBLINK](#)

Learning Labs with connections to Illinois Learning Standards

Testing the Waters (grades 4-8)

### National Wildlife Federation Publications

(in addition, see Green Teacher Net list below for other NWF curricula):

Your Big Backyard (ages 4-6) \$19.95 for one year subscription

Ranger Rick (ages 7-13) \$1 per issue for educators

National Wildlife (ages 13+) \$15 for NWF membership & one year subscription

### Peggy Notebaert Nature Museum of the Chicago Academy of Sciences [WEBLINK](#)

Teaching guide with connections to National Standards

Wild Music: Sounds and Songs of Life (grades K-12)

### Save Our Science

Curiosity Newsletters [WEBLINK](#)

### University of Illinois Extension

Schools Online

Natural Resources, the Environment and Ecosystems [WEBLINK](#)

A Walk in the Woods [WEBLINK](#) (grades 3-5)

The Great Plant Escape [WEBLINK](#) (grades 4-5)

The Adventures of Herman [WEBLINK](#)

My First Garden [WEBLINK](#)



