

The GreenThumb Gardener's Handbook



GreenThumb
City of New York Department of Parks & Recreation

GREENTHUMB INFO

GreenThumb
City of New York / Department of Parks & Recreation
Michael R. Bloomberg, Mayor
Adrian Benepe, Parks Commissioner

49 Chambers Street, Room 1020
New York, NY 10007

Phone: (212) 788-8070
Fax: (212) 788-8052
greenthumbinfo@parks.nyc.gov

www.greenthumbnyc.org

Staff

All staff email addresses are: firstname.lastname@parks.nyc.gov

Edie Stone, Executive Director
(212) 788-8075

Bilen Berhanu, Outreach Coordinator
(212) 442-8961

Gina Townsend, Chief Financial Officer
(212) 788-8064

Eric Frey, Outreach Coordinator
(212) 442-8952

Harold Paynter, Chief of Operations
(212) 788-8076

Rasheed Hislop, Outreach Coordinator
(212) 788-8062

Dyanne Norris, Administrative Manager
(212) 442-0155

Lillian Reyes, Outreach Coordinator
(212) 788-8065

Sarah Grieb, Publications and Data Coordinator
(212) 788-8060

Land Restoration Project

10th Street & Queens Plaza South (under the Queensboro Bridge)
Long Island City, Queens

Shawn Spencer, Deputy Director, Land Restoration Project
(212) 788-8079

Field Staff

Ricardo Alvear, Michael Gutierrez, Samuel Jackson, Diego Pantoja, Luis Pasuizaca, Wilson Torres

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LETTER FROM THE DIRECTOR

Dear gardeners and garden supporters,

I am pleased to welcome you to the 2011 edition of the GreenThumb Gardeners Handbook. GreenThumb is the largest community gardening program in the country, and a model for community gardening organizations worldwide. We are grateful to have you as valuable partners as we continue to expand sustainable public green space, enhance community involvement and enable residents citywide to invest in real improvements to their communities.

As you know, a majority of GreenThumb gardens were once abandoned lots, reclaimed by community residents who refused to be mired in urban blight. Today, these gardens continue to be managed by neighborhood residents and provide communal meeting places for individuals with common interests. Gardens improve air quality, increase bio-diversity, beautify communities and enhance neighborhood well-being. Gardens also offer public programming such as educational workshops, activities for children, food pantry giveaways, art exhibitions, block parties and a host of other activities that enhance and reflect the culture of the community itself. GreenThumb aims to help communities work together towards a safer, healthier, cleaner and more harmonious environment.

But the most important piece of the puzzle, the gear that makes the whole machine function, is you—the thousands of volunteer gardeners who invest their sweat, elbow grease, time, money, heart and brain-power. Without you, there would be no GreenThumb gardens, and all of our communities would be poorer as a result. In my ten years as Director, I have seen community gardens grow from temporary and often unrecognized community beautification projects to permanent, vital community resources, now defined as such in New York City law. This is largely the result of everyone who tirelessly advocated for and protected the gardens politically, to the thousands of community gardeners who continue to use these community spaces, investing hour after hour, day after day, to produce benefits in their communities that even the hardest of hearts could not help but recognize

We hope that this book is helpful to seasoned and new gardeners alike, providing useful guidance for the management of community gardens as we move into a brighter future. For those whose gardens are now under Parks Department jurisdiction, the future is now literally in your hands. No Parks gardens will be discontinued as long as they continue to be used in compliance with GreenThumb license terms. It is up to your community to ensure that the garden is well-run, both in its physical maintenance, and in the maintenance of the garden group. Now is the time for the group to consider writing bylaws and establishing a system of governance for the garden that is truly democratic and transparent. Now is also the time to consider a new level of independence for the garden, perhaps by the group applying as a not-for-profit organization, raising funds for garden improvements, or simply expanding your membership.

For those of you with community gardens under the jurisdiction of other city entities or privately owned, GreenThumb is as committed as ever to helping you ensure the long term success of your garden in whatever way we are able. Whether you garden on City property, at a school or on private property, the basics of good community garden management are the same. We hope this handbook will assist you to become even better stewards of our vital community garden resources. I am personally grateful to you for your commitment to your garden and community, and I know that my staff and colleagues feel the same. You are some of the most determined, dedicated, and hardworking folks in our city. You refuse to give up or give in to politics, bad weather, ill health, vandalism, hard times, or any of a thousand other problems you encounter every season. On behalf of the entire staff of GreenThumb, thank you for being the Community in our Community gardens.



Edie Stone
Executive Director, GreenThumb

TERMS & DEFINITIONS

GreenThumb is a program under the New York City Department of Parks and Recreation. Here are some terms and definitions to help you navigate this Handbook.

Block/Lot Number — The block number (1 to 5 digits) indicates the precise city block upon which a garden site is located; the lot number (1 to 3 digits) indicates the lot within the block. These numbers are essential to know as they are unique to every piece of property in the city, and never change, even if the garden site's name, ownership, or membership changes.

Community Board (CB) — A local representative body selected by the Borough President and City Council Members. Zoning changes, building permits and other land-use issues must come before the CB for review.

Contact People — A garden's main point people for GreenThumb. GreenThumb asks every garden to provide us with a Primary and Secondary Contact that will serve as liaisons. Both Contacts must provide current phone numbers, mailing address and email address, which may be shared with the public for membership inquires.

Department of Education (DOE) Garden — A garden existing on Department of Education property, which may also register with GreenThumb as well as be part of the NYC School Garden Initiative.

Department of Environmental Protection (DEP) — The Department of Environmental Protection delivers drinking water to all New York City residents and plays an important role in providing community gardens with seasonal access to fire hydrants for watering purposes.

Department of Transportation (DOT) Garden — A garden existing on city or state Department of Transportation property; many of these are registered GT gardens as well, but remain under DOT jurisdiction. City DOT gardens are licensed by DOT. State DOT gardens are not licensed at this time.

Department of Parks & Recreation (DPR) Garden — A garden existing on property under the jurisdiction of Department of Parks & Recreation.

Department of Sanitation (DSNY or DOS) — NYC's waste collection and disposal unit helps keep sidewalks outside of gardens clean. DSNY also assists with major cleanups for garden sites in need coordinated through GreenThumb.

Fiscal Sponsor — A 501(c) 3, non-profit, tax-exempt organization that acts as a sponsor by receiving grants or funds for a project or group that does not have its own tax exempt status. GreenThumb is sometimes able to be a fiscal sponsor on behalf of a community garden group or greening partners.

Greening Partner Organization — GreenThumb works with many different groups to provide events, workshops, materials (including this handbook) and other support for community gardens. A list of some of our partners is in the back of this guide and can be found on our website.

GreenThumb (GT) — New York City's community gardening program, which provides materials, technical assistance, educational workshops, and organizational and event support for public gardens throughout the five boroughs.

GreenThumb (GT) Community Garden — Gardens registered with GreenThumb, open to the public for visitation and participation in activities and garden membership. In order to receive supplies and services from GreenThumb, a garden must be registered and in compliance with GT license requirements (see page 9 for details). GreenThumb is not responsible for maintaining garden sites; this is the responsibility of the garden members.

GreenThumb/LRP Compound — Location of seasonal supply giveaways and base of operations for the Land Restoration Project.

GreenThumb GrowTogether (GTGT) — GreenThumb's annual spring conference that kicks off the growing season and brings together over 1,000 GreenThumb gardeners and greening partners for special workshops, guest speakers and networking.

Harvest Fair — Annual autumn event, celebrating the bounty of NYC community gardens. It includes music, harvest contests, food, children's activities, garden tours and more.

Housing Preservation and Development (HPD) — The city agency that supports the repair, rehabilitation, and construction of housing units throughout the city. Gardens on property under HPD jurisdiction may be used for development of housing following a garden review process.

Land Restoration Project (LRP) — A division of GT that works on restoring city property with most of its focus being directed at GT gardens. LRP typically takes on large scale projects, such as, compost, clean-fill and soil delivery; unauthorized garden structure removal; fence construction/repair; tree-planting and pruning; pathway construction and repair; and snow removal.

License — A signed agreement between the gardeners and the city agency under who's jurisdiction the garden falls, most commonly DPR or HPD. The license outlines the terms of use and rules and regulations for the garden.

New York Restoration Project (NYRP) Garden — A nonprofit organization that partners with individuals, community-based groups, and public agencies to reclaim, restore, and develop under-resourced parks, community gardens, and other open spaces in New York City. NYRP gardens are owned, restored, developed, and maintained via funding from the organization, but also may register with GT if they meet the requirements.

OASIS — Open Accessible Space Information System for NYC provides an online database of all registered NYC gardens with maps, historical information, and neighborhood names and jurisdiction for each garden. (<http://www.oasisnyc.net/garden/gardensearch.aspx>)

Open Hours — A minimum of 20 hours per week (10 which must posted) a garden's gates must be open April 1st through October 31st.

Operations Coordinator (OC) — GT's point person responsible for receipt, storage, and distribution of all physical resources (supplies, tools, goods etc.) to registered GT gardens. Responsibilities also include managing garden work-order requests and ensuring they are carried out in an appropriate and timely manner.

Outreach Coordinator — GreenThumb's field staff responsible for visiting all DPR gardens at least once each year for site inspections. OCs are also responsible for facilitating workshops, staffing events and generally assisting gardeners by delivering services or making referrals.

Parks Enforcement Patrol — Parks Enforcement Patrol (PEP) is responsible for protecting NYC parkland and ensuring safety for people who use it. They may be contacted regarding violations or offenses that occur at DPR gardens and parks.

PlaNYC — Mayor Bloomberg's proposal aims to increase the city's green space sustainability by setting specific standards to be reached by 2030. Standards include "ensuring that every New Yorker lives within a 10 minute walk of a park or green space," "achieving the cleanest air of any big city in America," and "reducing greenhouse gas emissions by 30%."

Program Guide — Quarterly guides produced and distributed by GreenThumb that include information about upcoming GT and partner events, workshops, supply giveaways, gardening news and other gardener services.

Tax-exempt Non-profit or 501(c) 3 — A legally constituted organization registered with the State of New York, whose primary objective is to support or actively engage in activities of public or private interest without any commercial or monetary profit purposes.

The Trust for Public Land (TPL) — An organization that owns over 60 gardens throughout the city. It is organized into two borough Land Trusts, Manhattan/Bronx and Brooklyn/Queens. They provide their gardens with technical support and organizing assistance, such as environmental education and programming. Many TPL gardens are also registered with GreenThumb.

REGISTRATION & LICENSE REQUIREMENTS

By following these guidelines, garden groups may register as a GreenThumb Garden to become eligible for supplies and technical assistance from the GreenThumb. DPR and HPD sites garden must satisfy the following guidelines in order to obtain a license to operate a garden.

All GreenThumb garden groups must:

Post Correct Signage — All GT gardens must post a GT sign with information about the program and contact information. DPR gardens must post a Parks routed sign that has the garden's name and a Parks leaf to indicate jurisdiction. (See page 13 for more information on signage).

Post and Maintain Open Hours — By definition, all community gardens must be open to the public. A minimum of 10 hours that the garden will be open must be clearly posted on the garden's gate. Gardens must be open at the posted times. Though we encourage gardeners to keep gardens open as much as possible, we require that they be open at least 20 hours per week from April 1st through October 31st. If you are unable to make your own sign, we are happy to make a sign for you. Go to greenthumbnyc.org/signs.html and click on "Sign Request Form."

Maintain an Active Garden Membership — All GreenThumb gardens must have at least ten active members. A complete list of garden members, including mailing addresses and phone numbers, must be given to GreenThumb at the time of garden registration and updated regularly. Keeping this list up-to-date and accurate ensures that all gardeners receive pertinent information from GreenThumb, such as program guides and event announcements. Updates to the garden membership list can be sent to GreenThumb by, mail or email or called into the office between 9:00 AM and 5:00 PM, Monday through Friday.

Maintain a Safe and Attractive Garden Space — Be creative! Your garden is a reflection of your community, and we hope that you'll have fun with garden design and layout. However, we do ask that you follow a few simple guidelines:

- Keep all fences, raised beds, tables, benches, chairs, and other items clean and well maintained.
- Keep all tools in tidy, secure storage areas such as sheds or locked tool boxes.
- Keep sidewalks, walkways, and curbs inside and adjacent to the garden clean and free of snow, ice, garbage, and plant debris.
- Remove all trash and debris from your garden in a prompt manner. Remember, it's easier to get rid of garbage than the rats it will attract!
- Keep all sources of water (barrels, rainwater harvesting systems, etc.) covered. Standing water attracts mosquitoes.
- Ensure that all structures (gazebos, casitas, sheds, etc.) built inside a community garden are in compliance with the Department of Building's guidelines. For more information on these guidelines, refer to the 'Structures' section or the GreenThumb Gardenhaus Guidebook, which is available on our website under 'Resources' section.

Host Public Events — All gardens must host at least one public event per year. Report your event(s) to GreenThumb. We like to know what's going on throughout the gardens. We also post your event(s) on GreenThumb's website and Parks Calendar. Sometimes we are able to include garden events in our quarterly program guide (see the Events section for more information and services that GT can provide).

Keep your Garden Locked at Night and Provide GreenThumb with a Key — If you decide to change the lock on your garden, please send GreenThumb a new key. GreenThumb needs to be able to get inside your garden in the event of an emergency, or for deliveries and inspections. For DPR and HPD gardens, GT reserves the right to cut locks if necessary.

Complete a New Registration Packet Every Four Years — GreenThumb requires all garden groups to complete a new registration packet every four years. We send out mailings to remind gardeners when it's time for registration. If your garden group missed the last registration, contact GreenThumb immediately.

Have Contact Persons sign a license — Gardens located on DPR or HPD property must have a license in order to operate. City DOT also requires gardens to be licensed. Privately owned gardens and gardens on DOE Property do not require licenses; however, written permission is required from the owner to use the lot. This permission letter should include detailed outline setting the parameters of use agreed upon between the group and property owner.

ROLE OF GARDEN CONTACTS

Because there are so many gardeners (currently more than 11,000), GreenThumb asks each garden to select two people to serve as contacts for the garden (one as primary contact and one as secondary contact). A contact person's responsibilities are different from, but related to the governance and leadership structure of a garden. Contacts do not necessarily hold decision making power, nor are they the president, but simply may act as a liaison between GT and the garden group. For example, if GreenThumb needs to contact your garden group for any reason, we will call the contact people first. It will then be up to those contact people to pass information along to the rest of the garden group.

Because serving as a contact person requires extra work, we recommend that members of a garden group share this responsibility. We suggest that members rotate the responsibility on a regular basis (such as every year). We recommend this process be done at a garden group meeting. When contacts change, be sure to have both the previous contact people and the new contact people speak with someone at GreenThumb. We need to keep our contact information as accurate and up-to-date as possible.

We also ask that both garden contacts reside in New York City and that at least one resides in the community board where that garden is located. The process for electing contact people should be outlined in your garden bylaws (see page 21 for more information on bylaws).

So, what does a contact person do?

A contact person is responsible for the following things:

Fill out required paperwork — This can vary based on what kind of garden you have, but a contact person may need to sign a license agreement and/or fill out a registration packet.

Send a membership list to GreenThumb — A contact person should ensure that GreenThumb has an up-to-date list of garden members, complete with addresses and telephone numbers.

Bring new members into the garden group — If someone is interested in joining a garden, GreenThumb will direct that person to the garden's contact people. A contact person should be able to explain the garden's membership procedure. Contact people are also responsible for welcoming new members into the garden, orienting them to garden rules and meetings, and providing them with bylaws and procedures.

Ensure that someone from your garden is attending GreenThumb workshops — GT hosts educational workshops and events every month of the year! We hope that someone from your garden is attending these events, especially since they are the access point for supplies. Knowledgeable gardeners equipped with proper tools make for a solid gardening group. When a member attends a workshop, the garden becomes eligible to receive tools or supplies being distributed at that workshop. Each year, GreenThumb gives away many different supplies, including seeds, compost bins, shovels, sheds-even greenhouses and rain-water harvesting systems! Don't miss out! Take your turn and represent your garden at a workshop. Many gardens post GT program guides on their welcome boards along with fliers and other information.

BASIC RESOURCES

Signage

The following types of signs are available from GreenThumb:

- **GreenThumb sign** — A thin green sign with name and description of GreenThumb program.
- **Routed Parks sign** — A thick green sign with garden's name and a Parks' leaf engraved into it.
- **Open hours sign** — 8^{1/2}" x11" laminated sheet with garden's weekly schedule of open hours. Made on request.

Routed Parks signs and GreenThumb signs must be posted at DPR and HPD sites. Open hour signs are required at all participating sites. Please remember to contact our office if your signs are damaged or missing.

If your garden needs specialized signs not listed above, such as "Curb Your Dog," or "No Dumping," please use the sign request form (see below). We also make customized laminated signs.

To request a sign, visit our website (www.greenthumbnyc.org/signs.html) and click on "Sign Request Form." Then mail or fax us the form. You can also call GreenThumb.

Supplies

GreenThumb gardens are eligible to receive many different gardening supplies and resources throughout the year, but to receive them someone from the garden must attend the GreenThumb workshop a particular supply giveaway.

There are generally two larger, seasonal supply giveaways each year, one in the winter and one in the spring/summer. Gardens must be registered and without violations to pick up supplies. All supplies are available on a first come, first served basis and while they last.

Workshops and the associated supplies are listed in the quarterly GreenThumb Program Guide. The guide is mailed or emailed to every gardener and is available on our website. Additionally, all GreenThumb workshops are listed on our website events calendar (www.greenthumbnyc.org/gardenevents.html).

Here is a sampling of supplies we have given out in the past:

Seasonal Supply Giveaways — Summer: Garbage bags, garbage cans, garden forks, shovels, hoes, rakes, hoses, wheelbarrows; Winter: Icebreakers, garbage bags, gloves, calcium chloride, snow shovels.

Seasonal Workshops — Season extension supplies and books; plant starts; garden journals, Just Food's farmers market guide (DIY series); Brick-laying hand tools.

Soil/Compost/Cleanfill — There are multiple workshops each year pertaining to soil health or composting where garden groups can request loads of soil to be delivered. If the workshop takes place in fall, the delivery will happen in the spring.

Hydrant Access

Each spring, GreenThumb mails out a letter to garden contacts with instructions on obtaining a hydrant use permit, and a list of DEP offices that will issue you a permit. Once you have a permit, contact GreenThumb to have your hydrant uncapped. Send a copy of the permit to GreenThumb and keep a laminated copy at the garden. This process can take time, especially as the season progresses, so we recommend doing this as soon as possible. Permits must be obtained each year.

Also, it is a good idea to introduce yourself to the local fire department workers in your neighborhood. Explain to them that you will be accessing the hydrant to water a GT community garden. Let them know when you will begin to access the water (in the spring) and let them know when you plan to be finished for the season (in the fall). If the fire department does not know why the hydrant has been uncapped, they may re-cap it before you are finished using it. Sometimes the local fire department workers can also open the hydrant for you in a timelier manner than the DEP.

If you need watering supplies such as hydrant wrenches and adapters, hoses and hose splitters, or watering wands, please look in the spring program guide to see which workshop will distribute these supplies.

GreenThumb generally hosts educational workshops in the spring related to water use and conservation. Some gardens may be eligible to receive a rainwater harvesting system from GreenThumb. If you're interested in learning more about rainwater harvesting, call GreenThumb or refer to page 67. You can also learn more about rainwater harvesting by visiting NYC's Water Resources Group website (<http://waterresourcesgroup.blogspot.com/>).

Portable Toilets

As a GreenThumb garden, you are eligible to rent a portable toilet through GreenThumb at a discounted rate. The garden group pays a monthly rental fee directly to GreenThumb. Delivery, pick up and maintenance are provided by the portable toilet company. If you'd like to have a portable toilet delivered to your garden, call GreenThumb to make the arrangements. Be prepared with an up-to-date membership list and events calendar.

Pruning & Tree Removal

Pruning is important for tree health; however, it must be done correctly. If you want to prune the trees yourself, we ask that you take a citizens pruning course (see Pruning in the Horticulture section of this book for more information). There are only four situations in which a tree under the jurisdiction of Parks & Recreation may be removed: (1) If the tree is dead; (2) If the tree is irreversibly diseased; (3) If the tree presents a hazard; or (4) If there is an unavoidable conflict between the tree and a construction project. In all cases, approval from GreenThumb and DPR is required before any work is done regarding the tree's removal (anything beyond routine pruning). In these instances, please call our main office. For full tree removal protocol see the 'Resources' page on our website.

Debris

If there is debris in your garden that is compostable (leaves, branches, plants), then compost it! If you don't have enough room to compost all of the debris in your garden, call GreenThumb, and we can put you in touch with other gardens that have larger composting facilities. DPR will also pick up properly bundled branches if a request is made to 311. DSNY does not pick up woody debris.

If the debris cannot be composted (garbage, bricks, metal, etc), you'll need to make arrangements with GT to have it picked up. If you're planning a garden cleanup day, contact GreenThumb at least three weeks before the event takes place to make arrangements. Depending on the time of year, GreenThumb can sometimes pick up the debris; otherwise we will contact DSNY to arrange a pick up. Please have everything sorted and bagged in heavy, black plastic bags and placed at the curb before the scheduled pickup time.

If someone else dumps debris in your garden, call 311 immediately to report it and ask for it to be picked it up. If this does not work, contact GreenThumb. We can advocate for you with the DSNY.

It can also be helpful to make a personal connection with the Sanitation workers in your neighborhood. Find out who picks up debris in your neighborhood, then introduce yourself to that person and explain how the GreenThumb gardening program works. Invite the Sanitation workers to come and visit your garden. Remember that reaching out to the community not only helps to strengthen the community, but it helps to ensure the continued success of your garden.

Dumpsters

Garden groups that need ongoing curbside pickup of their waste should contact the Department of Sanitation. Requests for collection services should be sent in writing via fax to (212) 788-3915 or by mail to:

NYC Department of Sanitation, Attention: New Service
125 Worth Street, Room 700
New York, NY 10013

The service request should include the following information:

1. Full address of the premises, including block and lot numbers
2. Name and daytime phone number of a contact person
3. A letter from GT stating the current registration status of the garden with a copy of the license

The applicant will be notified of the scheduled start date of services and the days of collection approximately 2 weeks after the Collection Office receives the request with all the required documents. For additional information, please contact the Collection Office at (646) 885-4830. For more information on the Department of Sanitation, please refer to their website (www.nyc.gov/sanitation).

Garden groups that require a dumpster for a one-time clean up should contact the GreenThumb office.

Another possibility is to fundraise and contract dumpster services from a private company. For example, you can call 1-800-433-8677 Dumpster Rentals at Home Depot.

Events

GreenThumb Gardens are required to hold at least one public event each season, though most hold many more than that. Events are a fun way to involve the community, get to know your neighbors and increase membership.

Past events from community gardens around the city have included:

- Art Shows
- Coat Drives
- Poetry Readings
- Movie Nights
- Children's Halloween Celebrations
- Farmers Markets
- Live Music
- Play Streets
- Harvest Festivals

GreenThumb sometimes offers grocery vouchers to gardeners through workshops during the year. These may be used to buy food and supplies for garden events. Gardeners can obtain grocery vouchers by attending educational workshops related to event planning. You must keep your receipts and mail them to GreenThumb.

We can post announcements of garden events on GreenThumb's website. Mail or email your announcement to us, and we'll post it as long as we receive it at least three weeks in advance. You can also make flyers for distribution in your neighborhood, post an announcement on your garden gate, and make announcements at local churches and community group meetings. Ask if you can post flyers at local cafes, laundromats, and bodegas.

If you need help making flyers, contact GreenThumb. To have us print a flyer for you, go to our website (greenthumbnyc.org/events.html) and click on "Events Listing Form." Send us the form by postal mail or fax at least three weeks in advance, or to greenthumbinfo@parks.nyc.gov by email. If you don't have internet access, please call us. We are also able to mail limited amounts fliers for you, but we do ask that you come to the office to prepare the envelopes. If there's a school in your neighborhood, you may also want to approach the school to see if students are interested in becoming involved with your garden.

Some gardens have created email groups, websites and even Facebook pages as a way to do outreach and keep the neighborhood and gardening group up to date on garden happenings. If your garden creates a website, be sure to email GreenThumb so that we can add to our website's list!

After you've had your event, send us pictures! We can post them on the website or include them in the quarterly Program Guide.

Permits

Notify GreenThumb and your local police precinct if you plan to have an event. It is also a good idea to introduce yourself and the garden group to Community Affairs Officers. GreenThumb community gardens are not required to have the standard Parks permits for events, but if there will be amplified sound, a sound permit is still required from your local police precinct. GreenThumb can issue a letter that you can take to your local precinct to obtain a sound permit if needed.

If you need street closure, contact your local community board to get permission. Be sure to contact the community board far in advance of the event. Community boards do not meet over summer and issue all their street closure permits in the spring, regardless of the when the event will take place. Listings of community boards can be found at online (<http://www.nyc.gov/html/cau/html/cb/directory.shtml>).

Hosting Workshop

If your group is particularly interested in having a GreenThumb workshop take place at your garden, or if you have a great idea for a new workshop call our office or email us!

CITYWIDE POLICIES

Garden Structures

All structures in gardens, including casitas, sheds, and gazebos must meet the guidelines established by the Department of Buildings and must have prior approval from GreenThumb. See the GreenThumb *Gardenhaus Guidebook*, available on our website, for more information.

Guidelines for Creating Parks Department Approved Structures:

1. All structures built in Parks Department community gardens must meet guidelines as issued by the Department of Buildings.

DOB guidelines specify:

Regardless of Zoning District, sheds, greenhouses or gazebos constructed by the Parks Department, or other authorized agent, on city-owned land used as "vest pocket" gardens may be treated similar to accessory buildings for open parking lots as outlined in NYCBC S.27-297 (d). Such structures may be constructed with combustible material and work permits shall not be required if such structures are:

- not more than one story
- not more than 10 feet in height
- not more than 150 square feet in area
- at least six feet from the lot line
- non-occupiable spaces only, such as storage if the structure is enclosed; and occupiable spaces for resting with seating if the structure is open on all sides (similar to bench seating in gazebos)

Guidelines issued by Technical Affairs and Borough Commissioners on 2/4/2006

2. Gardens with structures out of compliance with the above guidelines must obtain building permits from the Department of Buildings or modify their structures as necessary to meet the above guidelines. Structures out of compliance with the above may also be replaced with an authorized shed or gazebo kit provided by GreenThumb, where feasible.
3. In order to request a shed or gazebo kit, gardens must be registered and in good standing with GreenThumb and have made arrangements through GreenThumb to have any existing non-compliant structures removed. GreenThumb maintains a list of requests and fulfills them as our budget allows. We have been able to purchase an average of 10-12 sheds per fiscal year.

Encroachment

When Contractors Move In: A Strategy for Dealing with Encroachment

Can I give permission to a Contractor or a building owner to use the Garden?

- No. They must contact GreenThumb office
- Get all the information for the contractor/developer and contact GT as well
- Take pictures of the garden prior to any potential activity and use them to document any damage

What should I do if a Contractor is dumping substance in my Garden and destroying the property?

- Obtain contractor contact information and Department of Buildings work permit numbers
- Obtain a complete inventory of damaged or destroyed property
- Take pictures to document if anything gets destroyed including: structures beds, bed contents, trees shrubs, perennial plants, furniture or grills

Videotape or take pictures of the Contractor or Building Owner in action if at all possible. Contractors who damage gardens will be required to:

- Clean up and remove all fallen debris
- Immediately remove all construction materials from the garden
- Refill any excavation with clean fill
- Replant all damaged plant material

Contractors must ensure safety throughout the entire building process. They must not erect any scaffolding without a DPR issued permit under any circumstances.

Contractors who fail to adhere to any of these policies will be fined by the City. Gardeners should not attempt to correct any damage caused by a contractor without contacting GT for advice and documenting the damage first.

Any accidents in or damage to a DPR garden requires filing of an incident report with GT. Contact our office to receive additional copies of the incident report.

In some cases, Parks may allow a contractor working on an adjacent property to do work that impacts a garden. These permit agreements will be made on a case by case basis and require approval from the GreenThumb Director, The Parks Borough Chief and Parks Permit Office, as well as the garden group. Under no circumstances should a contractor be allowed to enter a Parks community garden before obtaining a DPR permit. Garden groups who allow this may risk being held legally liable for any damage or injuries that occur.

Animals in Gardens

Animals can be kept in the garden only in compliance with the New York City Department of Health and Mental Hygiene (DOHMH) and the NYC Department of Parks & Recreation regulations. Any violation of the city rules will result in a GreenThumb violation and possibly a fine.

The Rules of the City of New York (<http://24.97.137.100/nyc/rcny/entered.htm>) outline most of these rules in the following sections:

- Title 24: Title IV: Environmental Sanitation: Article 161 - Animals
- Title 24: Title II: Control of Disease: Article 11 - Reportable Diseases and Conditions
- Title 56: Section 1-04: Prohibited Uses

FAQs

Can I bring my dog to the garden?

Only properly licensed dogs who have been vaccinated for rabies may enter parks. They must wear collars with valid license tags, and be on a leash that is 6 feet long or less when in public places. Dogs must be under the control of their owner. It is a GreenThumb violation and illegal to leave a dog unattended in a garden or park. Dog waste must be cleaned up and disposed of promptly and properly. Individual gardens may prohibit dogs (other than service dogs) at their discretion.

Can I leave food for stray animals in the garden?

No. It is a GreenThumb violation to feed any wild/stray animal (except birds) in a park. Feeding birds can also draw rats, so it is recommended to keep bird feeding areas tidy and limited. Please recognize that it is a sanitation issue to have cats in the garden: when cats defecate in and around vegetable beds it creates a health hazard. Providing shelter or food for feral cats in GT gardens is strongly discouraged. Gardens may prohibit feeding and or housing of feral cats at their discretion.

Can I keep chickens in my garden?

Yes, but only hens in proper living conditions, including a coop, secure run, and; there is no limit to how many hens you can keep, however, too many hens is likely to create "nuisance conditions," which are illegal. It is a GreenThumb violation and not legal to keep roosters. For more information on keeping hens in NYC, please consult the Just Food Chicken Guide (<http://www.justfood.org/city-farms/city-chickens>). Roosters are not allowed in community gardens under any circumstances.

Am I responsible for cleaning the area where I keep my hens?

Yes. You must clean up after your hens regularly. It is illegal to allow your hens, or any other legal animals to create any "nuisance conditions." These include excessive noise, foul odors, or any other condition that constitutes a health or safety hazard. Consult the Just Food Chicken Guide (<http://www.justfood.org/city-farms/city-chickens>).

Can I keep turkeys, ducks, or geese in my garden?

No, turkeys, pigeons, ducks, geese and other fowl are illegal animals in NYC, due to the fact that they are migratory animals and can potentially spread disease (such as the West Nile virus).

Can I keep bees in my garden?

Yes, it is now legal to keep bees in New York City. You must register your hives and manage them responsibly. For more information, contact Just Food (www.justfood.org), or the NYC Beekeeping Group (www.nycbeekeeping.org) which offers free classes.

Can I keep turtles in my garden?

All snapping turtles are prohibited. It is illegal to buy or sell any turtle that is 4 inches or shorter due to risk of salmonella infection. Any turtles kept in the garden may not create "nuisance conditions."

Can I keep rabbits or parrots in my garden?

Rabbits and parrots are legal as pets in NYC. They are allowed in gardens as long as they are confined and do not cause "nuisance conditions."

Fines for illegal animals:

If the Department of Health and Mental Hygiene receives a complaint, a DOHMH inspector will come to assess the property. Roosters and other illegal animals will be taken from you and you will be fined. Fines for illegal animals are between \$200 and \$2000; these fines increase with repeat violations.

GROUP DEVELOPMENT & COMMUNITY INVOLVEMENT

Writing and Amending Bylaws

GreenThumb strongly recommends that all garden groups write bylaws. Bylaws are simply mutually agreed upon rules that a garden group creates in order to regulate its current and future practices. In other words, a garden group sits down together and decides how they want to divide up various garden responsibilities, bring in new members, change leadership, and go about events planning.

Bylaws may change and evolve as the garden group changes and evolves. The important thing is that bylaws be decided on, democratically, as a garden group. For example, what may have worked ten years ago, when there were fifteen members, may not work now when there are thirty. If your garden group has bylaws, you may want to re-examine them every year or so. Decide if the current group likes the bylaws as they are written or if they would like to amend (change) certain aspects of the laws. Hopefully, there is a process written into the bylaws that states how they may be changed. Often, a vote will need to take place, with a majority of the garden group supporting the amendment in order for it to pass.

Most garden group bylaws include the following:

- The group's stated mission or purpose
- Membership requirements and procedures
- Leadership requirements and election procedures
- The group's decision-making process
- A meeting schedule (i.e. the garden group will meet the last Thursday of every month)
- Procedure for amending the bylaws

Each member of the garden group should receive a copy of the bylaws when he or she joins the group. The new member should read and understand the bylaws carefully, then sign off on them, indicating that they are willing to adhere to the stated guidelines. Bylaws are also required as part of the process to become a 501c3 not for profit organization.

Handling Money

If your garden group is seeking to raise funds or solicit donations, you will need a secure place to put the funds where they can also be monitored. While groups raising a lot of funds often register as not-for-profit organizations in order to be able to receive tax exempt status. However, because of the paperwork and fees involved groups operating on a smaller scale often use a fiscal conduit to handle donated money. Sometimes GT is able to act as fiscal conduit for donations to a garden. Requests are considered on a case by case basis by the director. It is recommended that the garden elect a treasurer and create a book keeping system for accountability and transparency for the allocation of funds.

If your group needs help with becoming a 501(c)3 or opening a bank account, get in contact with Citizens Committee of New York (www.citizensnyc.org), or see Partnerships for Parks tip sheets, available in their online library (www.partnershipforparks.org).

For more for information on bylaws and group development:

- http://www.partnershipforparks.org/library_links/index.html
- <http://www.citizensnyc.org/>

HARLEM ROSE GARDEN
4-6-8 East 129th Street
Garden Membership & Guidelines
2007

There is a \$20.00 yearly membership fee for Active Garden Members. GreenThumb rules require that there are at least 10 Active Garden Members. There is a \$75.00 yearly membership for "Friends of Harlem Rose Garden" Membership. Funds received from membership dues will be used for items necessary in the basic operation of the garden (i.e. lock and keys, basic materials). Excess funds and donations will be kept in the Garden's bank account for expenses to be decided upon by a simple majority vote by Active Garden Members.

Each Active Member will have a key to the garden and the tool shed. Each "Friends of Harlem Rose Garden" Member will have a key to the front gate only. Keys cannot be transferred or lent to other parties.

All Active Garden Members are required to work 2 hours per week in the Garden. Opening and closing of the Garden for the Public Hours will be shared and scheduled amongst Active Garden Members using a sign-up sheet or calendar.

The Harlem Rose Garden is designated as an "ornamental" garden consisting of flowers, shrubs and trees.

Active Garden Members will plan annual activities and events.

Gatherings of more than 5 visitors will require notification to either of the Harlem Rose Garden's 2007 GreenThumb Contacts: Jane Doe, name@email.com, 212-XXX-XXXX or John Doe, name@email.com, 347-XXX-XXXX. Gatherings of 10 visitors or more must be approved of by a simple majority of Active Garden Members in order to avoid scheduling conflicts. Small gatherings by Garden Members will not require prior notification or approval.

Garden Members are responsible for cleaning up after themselves and their guests and for replacing all supplies used.

Members behaving in a disruptive or generally disapproved of manner affecting the peace of the garden may have their Membership revoked by a simple majority vote by Active Garden Membership. Membership fees will not be refunded.

Harlem Rose Garden meetings will be held on the first Saturday of every month at 12 NOON in the garden. Decisions concerning the Garden will be made at these meetings by a simple majority of attending Active Garden Members unless prior arrangements are made. Membership guidelines may only be altered by a majority vote by Active Garden Members.

**Building a Healthy Garden Group:
10 Tips for Resolving & Avoiding Conflicts in Your Community Garden**

by Hannah Riseley-White (Green Guerillas) and Ena K. McPherson (Vernon & Throop Community Garden and T&T Vernon Block Association Community Garden)

Want to have a healthy garden group and avoid conflicts between garden members? Want to keep everyone involved and participating to garden work? Here are ten suggestions based on years of community gardening:

1. Create an Open Garden

Create a colorful 'Open Garden' sign that invites residents and passersby to come into the garden. Keep the garden gate open when working in the garden at all times; and most importantly allow visitors a sense of freedom to explore the garden on their own. People sometimes just want to enjoy the space on their own and aren't interested in a formal tour.

Your community garden belongs to your community. Make sure people know they are welcome to get involved in whatever way is appropriate for them.

2. Share Leadership

All garden members should have a sense of ownership in the garden. Allow all members to take the lead in an area of interest. Do not tell them what or how to do it, let them take on responsibility and let that area of work be their own.

Everyone has something to offer; tap into members strengths.

Have the grace to step aside and let go of control. As a garden leader your first priority is to plan for and work towards leadership transition to others. The garden's strength and sustainability depend on a diverse and prepared group of leaders—not just one or two individuals.

3. Acknowledge All Contributions

Always say 'Thank you'. Give credit where it's due, acknowledge all efforts, big and small, of all garden members.

4. Be Open and Flexible

Listen and be open to the ideas each member brings. Be flexible in your expectations of members' abilities; some of the greatest ideas come from children gardeners. Be responsive, act on all suggestions; let members try out their ideas.

5. Take the 'I' Out of Community Gardening — Emphasize the 'WE'

A community garden is a collaborative effort. The garden does not belong to any one person.

Working towards consensus should be a core principle in how things get done. Hold garden meetings where all opinions are respected and listened to. It is important to understand what motivates individual garden member's participation.

6. Leadership Performance

Are you performing in your leadership role? Leadership requires work. If you are not ready to implement initiatives or lead projects in the garden, step aside and let others take the lead.

Listen to your group—they will give you hints on what they expect from you as a leader and also on what they are prepared to do as members.

You are only as good as the people you lead. Set goals that are clear and realistic; you can't expect members to follow through if you don't yourself.

7. Membership Agreement

Are you performing in your leadership role? Leadership requires work. If you are not ready to implement initiatives or lead projects in the garden, step aside and let others take the lead.

Listen to your group—they will give you hints on what they expect from you as a leader and also on what they are prepared to do as members.

You are only as good as the people you lead. Set goals that are clear and realistic; you can't expect members to follow through if you don't yourself.

8. Community Building Events

Celebrate and enjoy the garden as a group. The more time people spend together the better they get to know and understand each other. Organizing parties, potlucks, workdays or other events builds understanding and community morale. Be sure to invite other local community groups and organizations too.

9. Ethnic, Racial and Cultural Biases Can Sow the Seeds of Conflict

It is easy to offend others without realizing it. Language is a powerful tool; it can empower as well as diminish, use it wisely. Don't make assumptions about others, be sensitive to cultural differences.

Food brings people together or can tear them apart. Be respectful of various cultural cuisines. Encourage gardeners to grow ethnic foods. This can provide a learning opportunity for the whole group. Be open to ideas that will broaden your knowledge of horticulture.

Cultural observances are key in establishing a harmonious relationship with your fellow gardeners. Highlighting and observing gardeners' ethnic and cultural holidays goes a long way towards making members feel like part of a group.

The ideas stated above will help avoid having a discontented group. What you learn from each other may surprise, enlighten and please you.

10. Address Conflicts

Create an open forum that encourages dialogue, this will set the groundwork for resolving conflicts. Try to avoid side discussions with a few individuals—wait for the full meeting.

Don't let the discussion focus on earlier occurrences, stay focused on a positive solution that moves the garden group past the conflict. Look for a solution that is fair to all garden members and that sets a precedent of consensus building and group understanding.

If you sense there is an issue between garden members, create a safe space for discussion

before it turns into a larger issue. Many conflicts are easier to resolve than you may think.

Review your membership agreement for possible solutions. If it does not directly address the current issue, could the agreement be adapted to include language that would help your group avoid this problem in the future?

If you can't resolve the conflict internally, seek help from a mediation group such as Safe Horizons:

Safe Horizon Mediation Program in Manhattan (212) 577-1740 or Brooklyn (718) 834-6671, or by email at mediation@safehorizon.org.

HORTICULTURE

Much of the following section has been reprinted with permission from the Just Food City Farms Tool Kit, and Bronx Green-Up of the New York Botanical Garden, and covers only some of the very basics of gardening.

Just Food offers workshops throughout the year, tip sheets, guides, and is an all around excellent resource for community gardens and urban farms. Additionally, they are one of the lead partners in the Farm School NYC, which offers comprehensive training in all aspects of urban agriculture through a two-year certificate program and a wide range of individual courses.

You can also join the City Farming NYC Meetup! Find out about upcoming workshops and events, post on a discussion board, and answer each others' questions about farming in NYC (www.meetup.com/City-Farming-NYC).

For more information and tip sheets from Just Food, see the order form in the back of this book or:

Just Food
<http://www.justfood.org>
(212) 645-9880 x221
info@justfood.org

Bronx Green-Up, the outreach program of The New York Botanical Garden, provides horticultural advice, technical assistance, and training to community gardeners, school groups, and other organizations interested in improving urban neighborhoods through greening projects. At the heart of Bronx Green-Up are the community gardens of the Bronx and a compost education program. For more information:

Bronx Green-Up / The New York Botanical Garden
http://www.nybg.org/green_up/
(718) 817-8026

Compost Information:
"Rotline" (718) 817-8543
<http://www.nybg.org/compost/>
bronxgreenup@nybg.org

NYC GARDENER'S CALENDAR

This calendar is a collaboration between Molly Culver, GreenThumb; Ursula Chanse and Sara Katz, Bronx Green-Up/NYBG; Hannah Risely-White, Green Guerillas; and Roger Repohl, Geneses Park Community Garden.

Use this monthly calendar as a general guide/checklist for planning and doing garden tasks.

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
|--|-----|-----|--|-----|------|---|-----|-----|--|-----|-----|
| <p><input type="checkbox"/> Order seeds (See December for details)</p> <p><input type="checkbox"/> Shovel any snow on sidewalks that border your garden.</p> <p><input type="checkbox"/> Plan your garden for the year. Crop rotation, succession planting, interplanting, and trellis planting are just a few things to think about:</p> <p style="padding-left: 40px;">Crop Rotation — Planting vegetables from the same family in the same spot every year can wear out the soil. Check your notes from last year. What and where did you plant? Plan to rotate each area to a different family every season. Below is list of plant families with examples of crops:</p> | | | | | | | | | | | |
| Beet Family | | | Brassica Family | | | Grass Family | | | Mallow Family | | |
| beets spinach chard | | | broccoli brussels sprouts cabbage cauliflower collards kale kohlrabi mustard radishes rutabaga turnips | | | corn | | | okra | | |
| Mint Family | | | Morning Glory Family | | | Nightshade Family | | | Onion Family | | |
| basil marjoram lavender mint oregano rosemary sage savory thyme | | | sweet potatoes | | | eggplant peppers potatoes tomatoes | | | chives cipollini garlic leeks onions shallots | | |
| Parsely Family | | | Pea Family | | | Squash Family | | | Sunflower Family | | |
| anise carrots celery cilantro cumin dill fennel parsley parsnips | | | beans peas | | | cucumbers gourds melons pumpkins squashes | | | lettuces salad greens sunflowers | | |

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Succession Planting — Plan for three seasons: spring, summer, and fall. The following planting plans give examples of how to rotate crops among the families for a small space (2-foot square) during one year, and changing what is planted in that same space over three years. The goal is to rest the soil in between periods when heavy feeders, like the Nightshades, are grown, and also for pest and disease prevention. Below a diagram with a few example plans for a three-year succession planting schedule:

THREE-YEAR SAMPLE PLANTING PLANS FOR A 2-FOOT-SQUARE AREA

| Year | Spring Planting (early April) | Summer Planting (mid to late May) | Fall Planting (August - September) |
|------|---|--|---------------------------------------|
| 1 | lettuces, salad greens | tomatoes, peppers, eggplant, or potatoes | spinach, beets, or chard |
| 2 | broccoli or cabbage | bush beans | basil |
| 3 | cilantro | <i>Trellised:</i> cucumbers, squashes, or melons | lettuces, salad greens |
| 1 | kale, collards -----< all season >----- | | |
| 2 | cilantro | okra | spinach, beets, or chard |
| 3 | lettuces, salad greens | sweet potatoes -----< until fall >----- | |
| 1 | onions | summer squash | brussels sprouts |
| 2 | peas | beets | carrots |
| 3 | radishes or turnips | potatoes | garlic (until following July) |

Interplanting — Maximize your space by planting low-growing or fast-growing plants around tall-growing and slow-growing ones, e.g. basil around tomatoes, dill around cucumbers, or squash beneath corn.

Trellis Planting — Also maximize space by growing vines up a trellis, e.g. cucumbers, melons, squashes, and pole beans. Even some tomatoes can be trellised!

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Winter prune hardy fruit trees (apples, cherries, figs, plums, pears), grapevines, and shrubs. <input type="checkbox"/> Maintain garden tools. Clean and sharpen pruners. Remove rust from shovels and rakes. <input type="checkbox"/> Start seeds indoors for cool-season crops like broccoli, kale, cilantro, collards, and chard. | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Turn in cover crop. Will generally take 3-4 weeks to decompose. <input type="checkbox"/> Test soil for contaminants and pH level, and amend accordingly. <input type="checkbox"/> Start seeds indoors for warm season crops such as tomatoes, peppers, and eggplant. (Look for the annual GreenThumb seed giveaway in Spring Program Guide.) <input type="checkbox"/> Continue to winter prune hardy fruit trees. <input type="checkbox"/> Move/prune dormant perennials (trees, shrubs, vines). End of March/early April is the last chance! <input type="checkbox"/> Get your compost going with pruning clippings and other green trash. <input type="checkbox"/> Renew your hydrant permit with DEP for accessing the fire hydrant this season. <input type="checkbox"/> Organize a community workday in the garden. Recruit new members, review and revise your garden membership agreement or bylaws, designate plots for the season. <input type="checkbox"/> Go to the annual GreenThumb GrowTogether Conference. <input type="checkbox"/> Record! Make notes in your garden observation notebook. | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Prepare your garden beds around the first week in April. Add compost and turn soil when thawed. <input type="checkbox"/> Late winter prune less cold hardy fruit trees, such as peaches and apricots. <input type="checkbox"/> Sow spring seeds outdoors (peas, spinach, beets, radishes, lettuce), and plant seedlings (kale, chard, collards, etc.). <input type="checkbox"/> Check the weather for frost. (Average last frost date in NYC is May 15). Protect new plants from frost with plastic sheeting or row cover cloth. <input type="checkbox"/> Connect rainwater harvesting system. Clean and check for repairs, if necessary. <input type="checkbox"/> Uncover cool season crops (if any overwintered under cover/cloche), but remain wary of low nighttime temperatures until last frost. <input type="checkbox"/> Refill woodchips. Call a tree trimming company to refill woodchips in pathways, play areas, and gathering areas of gardens. <input type="checkbox"/> Care for garden perennials. Compost and mulch your plants. <input type="checkbox"/> Submit your membership list, membership agreement, open hours, and a copy of your current key to GreenThumb. <input type="checkbox"/> Record! Make notes in your garden observation notebook (e.g., Which indoor seeds are germinating? Which plants are doing well outdoors? Pests in the garden, etc.). | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Harvest cool season crops. <input type="checkbox"/> Sow summer seeds and transplant summer seedlings, then fertilize transplants (fish emulsion, compost tea, etc.). <input type="checkbox"/> Inventory market supplies (If you're a farmers market gardener.) <input type="checkbox"/> Throw a spring community event such as a "Salad Day," featuring your garden produce. <input type="checkbox"/> Record! Make notes in your garden observation notebook, especially take notes of your crop rotation—what is planted where and in relation to the past several years. | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Inter-sow a low growing summer cover crop (like crimson clover). <input type="checkbox"/> Begin to harvest garlic from last fall. <input type="checkbox"/> Sow late summer crops (bush beans, collards, carrots, etc.), or late summer harvest. <input type="checkbox"/> Again fertilize summer crops (fish emulsion, compost tea, compost top-dressing, etc.). <input type="checkbox"/> Record! Make notes in your garden observation notebook. | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Celebrate the garden with a community party or potluck. <input type="checkbox"/> Summer prune fruit trees and fertilize well with compost. <input type="checkbox"/> Sow fall crops: Start fall seeds in flats. <input type="checkbox"/> Report to Farming Concrete how much food your garden grew. Visit http://farming-concrete.com/ for more information. <input type="checkbox"/> Preserve! Can your pickles, beans, and other fruits and vegetables! <input type="checkbox"/> Record! Make notes in your garden observation notebook. | | | | | | | | | | | |

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| <ul style="list-style-type: none"> <input type="checkbox"/> Harvest! <input type="checkbox"/> Transplant fall seedlings and fertilize (fish emulsion, compost tea, compost top-dressing, etc.). <input type="checkbox"/> Be water-wise: Water well during cooler parts of the day—morning and evening. <input type="checkbox"/> Can your tomatoes for delicious tomato sauce that will last through winter. <input type="checkbox"/> Continue planting cool season crops. <input type="checkbox"/> Record! Make notes in your garden observation notebook. | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
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| <ul style="list-style-type: none"> <input type="checkbox"/> Early September is your last chance to plant cool season crops such as kale, spinach, beets, radishes, and lettuce. You can replace finished summer plants with these crops. <input type="checkbox"/> Start saving seeds for next year. <input type="checkbox"/> Have a community harvest festival and invite the neighborhood. <input type="checkbox"/> Report to Farming Concrete how much food your garden grew. Visit http://farming-concrete.com/ for more information. <input type="checkbox"/> Record! Make notes: What grew well? What didn't? | | | | | | | | | | | |

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| <ul style="list-style-type: none"> <input type="checkbox"/> Begin to harvest cool season crops. <input type="checkbox"/> Check the weather for frost (average first frost date is around October 20). Construct a hoop house/place your cold frame for season extension. <input type="checkbox"/> Plant cover crop, such as winter rye, in empty beds. <input type="checkbox"/> Divide overgrown perennials and replant for better spacing and ease of plant management. Add compost around the transplants. <input type="checkbox"/> Throw a Halloween event for kids in the neighborhood—turn your casita into a Haunted House! Give away fresh veggies! | | | | | | | | | | | |

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| <ul style="list-style-type: none"> <input type="checkbox"/> Organize a community workday to clean the garden, plant cover crops, and garlic, etc. <input type="checkbox"/> Plant garlic and ornamental bulbs such as daffodils, tulips, and hyacinths. <input type="checkbox"/> Continue to harvest cool season crops. <input type="checkbox"/> Prepare beds for winter. Plant more cover crop or add 2 inches of compost on top of beds for the winter. Mulch remaining areas. <input type="checkbox"/> Mulch perennial areas, trees, and shrubs. <input type="checkbox"/> Prune perennials. (You could also wait until March to cut back perennials). <input type="checkbox"/> Disconnect your rainwater harvesting system. (Clean and repair, if necessary). <input type="checkbox"/> Record! Make notes in your garden observation notebook. | | | | | | | | | | | |

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
|--|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|
| <ul style="list-style-type: none"> <input type="checkbox"/> Record! Capture the full season in your record-keeping system, plan your crop rotation for next year, begin to source seeds for the coming season. <input type="checkbox"/> Attend GreenThumb's winter supply giveaway. <input type="checkbox"/> Mulch your street trees. Protect your trees from winter road salts by adding a fresh layer of mulch. Discard and replace this mulch in spring. <input type="checkbox"/> Order seed catalogs for next season. Order online or call the company to request a copy. See page 87 in the Additional Resources section for some recommended seed vendors. | | | | | | | | | | | |

SOILS AND SOIL CARE

What exactly is soil, and why should gardeners make such a fuss about it?

Soil is a very complex substance, composed of solids, liquids, gases, minerals, and organic matter. Soil is actually teeming with microscopic organisms; soil is a living substance.

Why is soil so important?

Because it is essential to all plant life!!

Layers of Soil

There are three layers of soil:

- Topsoil** is the upper layer with the richest composition of minerals, humus and nutrients. It is in the topsoil layer that most flowers, vegetables and lawns extend their roots.
- Subsoil** is the layer immediately below the topsoil, made up of denser particles and usually without much fertility or humus. Rocks may or may not be present. Subsoil is usually what you have to dig through when planting a young tree or shrub requiring a large planting hole. Because of the poor condition of most subsoil, you must add organic material such as peat moss or compost to the planting hole for trees and shrubs. This subsoil will be their root zone, and the subsoil needs improvement for the best plant growth.
- Hardpan** is not present under all sub soils but is common in the eastern areas of the U.S. where clay soils predominate. Hardpan is a heavy, thick, impervious layer of pure clay, which prevents normal drainage. If you have hardpan underneath your subsoil, then major work will probably be needed before serious gardening begins. Solutions to the drainage problem may include using raised-bed plantings.

Types of Soil:

There are four main types of soil common to most home gardens: sand, silt, clay and loam. In some areas of the country, there are also soils called muck types. Almost no garden soil is composed exclusively of clay, silt or sand; soils are made up of some of each of these elements, plus other materials such as humus, water, air and nutrients. The terms "texture" and "structure" are often mentioned with regard to soil. Technically, texture describes the size of the soil particles, and structure describes the arrangement of the particles.

- Sandy soil** is composed mostly of granular rock particles of visible size, with some clay and humus. Sandy soils drain well, but do not retain soil nutrients to the desired levels because of leaching (washing away by rain or run-off). They may also include gravel of various sizes. Sandy soils have a coarse texture and loose structure.

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- ❑ **Silt soil** is made up of small particles which are smaller than sand but slightly larger than clay. The characteristics of silt soils are very similar to clay soils - texture tends to be fine, often with dense structure.
- ❑ **Clay soil** is composed of tiny clay granules, too small to see individually, which have a tendency to stick together; usually some sand and humus are present as well. Clay soils generally have poor drainage because the particles are packed together so tightly. Texture is fine and structure is dense.
- ❑ **Muck soils** are made up of a high percentage of humus with little or no clay or sand, and are highly regionalized. Muck soils have a tremendous water holding capacity, which is good for crops that like plenty of water, such as celery and onions.
- ❑ **Humus** is that all-important part of the soil, which is derived from decomposed organic matter rather than from minerals, and it is what makes the soil crumbly, soft and workable. Humus is the key to gardening success.
- ❑ The ideal soil, often called "**good garden loam**" in gardening books, is a mixture of clay and sand, with a high percentage of humus. Loam soils drain well, but not too quickly; the nutrient- and water-holding capacity encourages good plant growth. Texture is medium; structure is crumbly.

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Improving Your Soil:

Gardeners often use the word "tilth" to describe their soil. Good tilth is important to support good plant growth and is improved with regular care. The key to improving soil tilth is to keep the humus content high. Here's how:

- ❑ Add **organic material** to your soil as often as possible, and replenish frequently because humus is always in the state of decomposing.
- ❑ If your soil is loose and crumbly, even in midsummer, you know you have good tilth. Even then, don't stop adding humus-building materials.
- ❑ It is impossible to add too much humus to your garden soil.
- ❑ Soil that is waterlogged, soil that is too hard to spade, and plants that wilt constantly are all indications of a soil that needs more humus added.
- ❑ Composted manures will also add humus content to the soil.
- ❑ On heavy clay soils, the addition of liberal amounts of composted manure or composted plant refuse will lighten the soil structure, allowing both water and air to enter among the tightly packed clay particles. This improves root growth.
- ❑ On sandy soils, humus adds water-holding capacity, cutting down on the loss of soil moisture and benefiting root growth.

SOIL CONTAMINANTS

Soil contamination comes from a variety of sources, including garbage dumps, sewage sludge, pesticide residues, old building materials that may contain peeling paint, and air and water pollution. You can reduce the danger to your own health and your garden in a number of ways.

First, identify the problem. The best clue to determining whether you have soil contamination is to investigate the history of your land and nearby properties. What were they used for in the past? What chemicals may have been used there?

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Soil Test

If you suspect the presence of harmful contaminants in your soil, you should have a special test done as routine soil tests do not check for these. Visit Cornell Cooperative Extension Service of New York City's Web site for instructions (<http://cna1.cals.cornell.edu>).

Brooklyn College's Environmental Sciences Analytical Center also offers soil and plant tissue testing for heavy metals (www.brooklyn.cuny.edu/pub/departments/esac/1535.htm). Additionally, UMASS Amherst Soil Testing Lab provides services, including testing for estimated amounts of some heavy metals such as cadmium and lead (www.umass.edu/plsoils/soiltest).

Inorganic contamination may come from pesticides, air and water pollution, improper waste disposal, treated lumber, and sewage sludge. Concentrated levels of inorganic substances such as heavy metals and non-metallic compounds can be toxic. The most common soil-contaminating elements include arsenic, boron, cadmium, copper, fluorine, lead, manganese, mercury, nickel, and zinc. Heavy metals such as lead, cadmium, and arsenic may stay in the soil for a long time, and certain soil conditions, such as a shortage of organic matter, might cause the toxins to be taken up by plants.

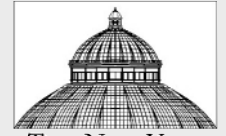
Lead, a heavy metal, is among the most widespread soil contaminants. It may come from past automobile exhaust (when lead was used in gasoline) or flakes of lead-based paint. Lead is especially dangerous to children under age six and pregnant women. Although there is no clear standard of what is considered "safe," the UMass Soil Testing Laboratory categorizes estimated total lead levels in this way (follow precautions listed below):

- ▶ Over 1,000 parts per million (ppm) of lead = high-lead soil
 - ▶ 500 to 1,000 ppm = medium
 - ▶ under 500 ppm = low
- 120 ppm or less of lead in soil is normal in agricultural production.
 - If levels are above 300 ppm, young children and pregnant women should avoid soil contact.
 - Any soil with more than 500 ppm of lead should be of concern if food production and children are involved.
 - For soils with over 1,000 ppm of lead, steps should be taken to remedy the soil. This may also be considered a hazardous waste situation, and you should contact Cornell Cooperative Extension of New York City (see above).

Exposure to soil contaminants

- People can be exposed to contaminants through eating or drinking, skin contact, or even breathing.
- The main health hazard with heavy metals is direct contact with the soil. If children play in soil that contains lead paint, they can inhale the lead as dust or absorb it through their skin. Young children may also ingest the soil.
- Contaminated soil particles may also stick to edible parts of vegetables or be taken up by plants in the garden soil.
- Contaminated soil may also affect plant growth. If a plant absorbs metallic elements through its roots, it may grow stunted and become yellow. Toxins are absorbed more readily into the leaves and roots, not the fruiting part of the plant. Time is also a factor; for example, collards would have a greater chance of absorbing more heavy metals than lettuce, because collards grow for a longer period during the season and lettuce grows only a short time before it is harvested.

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Precautions with Heavy Metal Contaminants

If your soil contains metal contaminants, keep the metal where it is and do not allow it to enter the food chain. Take the following precautions:

- If you suspect that your vegetables are contaminated, do not eat root and leaf vegetables as concentrations will be highest in those parts of plants. Avoid growing these types of crops in heavily contaminated soil. Eating fruit and seed crops are less of a threat.
- Adding organic matter such as compost is key to reducing the availability of metal contaminants in your soil. Organic particles will bind with metals and help prevent them from being absorbed by your plants.
- Keeping pH levels close to neutral and making sure drainage is adequate helps to assure that the contaminants don't move in your soil. Your ideal pH level is between 6.5 and 6.8. If soils contain heavy metals, a pH closer to 7.0 is better.
- Mulch and use cover crops to keep dust levels down and organic matter levels up.
- Wear gloves when gardening and thoroughly wash hands after gardening.
- Thoroughly wash produce before eating.
- Keep play areas and pathways covered in mulch to reduce exposure to the soil.
- Grow crops in raised beds (with landscape fabric as a barrier between the new and existing soil) or containers filled with uncontaminated soil. This is especially important if you suspect higher levels of contaminants.

Resources

For more information, fact sheets, and other resources on soil contaminants, visit Cornell Waste Management Institute's Dept. of Crop & Soil Sciences: <http://cwmi.css.cornell.edu/soilquality.htm>

MANAGING SOIL pH

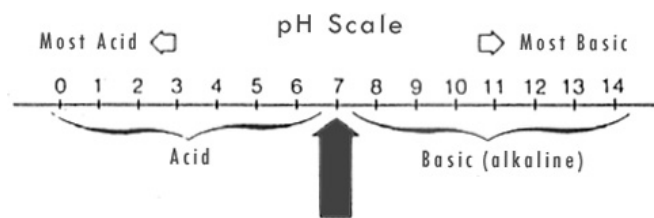
What is soil pH?

- Soil pH is a simple measurement of the degree of acidity or alkalinity of a soil.
- The pH measurement scale describes a **neutral soil** as having a **pH of 7.0**; an **acid soil** with a **pH below 7.0**; and an **alkaline soil** or "sweet" soil with a **pH above 7.0**.

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What pH do plants like?

Most plants grow best in slightly acid soils with a pH range of 6.0 to 6.8.

How does improper pH affect the health of your plants?

- The pH of your soil should be in an acceptable range for the majority of plants growing there.
- Improper pH restricts the root and top growth of plants: reduces the availability of plant nutrients; decreases biological activity desirable in healthy well balanced soils; and increases the availability of toxic elements in the soil.
- Many plants growing in improper soil pH conditions slowly decline from poor health complicated by disease and insect problems.
- Even expensive and time-consuming soil management practices cannot compensate for improper soil pH.

How is soil pH corrected?

- Improper pH soil conditions can be corrected.
- Ground limestone is used on an acidic soil to raise the soil pH.
- Sulfur can be used on an alkaline soil to lower the soil pH.
- These corrective materials are added only when needed and at a rate determined by the results of a soil pH test.
- Compost tends to neutralize the soil so that pH manages itself.

When should the pH be tested?

- Soil pH should be tested before installing any new garden (*keep your soil management practices simple by grouping together plants with similar pH requirements*).
- The soils in our area slowly become more acidic over time.
- Soil pH of established lawns, gardens, or landscape plantings can be monitored by soil pH testing **every 2 years**.
- Test results will indicate when to add limestone or sulfur.
- Never check soil pH right after an application of lime or sulfur because your test results will be incorrect.

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**When do you apply limestone or sulfur to correct soil pH?**

- Soil pH correcting materials can be applied anytime the soil is not too muddy.
- If the soil pH needs to be adjusted, it is easier to do before planting.
- Soil reactions occur slowly, and if test results show that a substantial amount of limestone or sulfur is needed, it is best to apply materials 3-4 months before planting or preferably in the fall.
- Limestone should not be added to a soil unless a test indicates need to raise soil pH.

How is lime or sulfur added to the soil?

- Recommended rates are mixed evenly and thoroughly into the soil.
- When possible, mix recommended quantities into the first 4 inches of soil.
- Sometimes it is not possible to mix lime or sulfur into the soil. In established gardens, spread recommended rates of lime or sulfur evenly over the soil surface area and cultivate gently into the soil without injuring plant roots.

What to look for when purchasing lime or sulfur?

- The ground limestone usually found in garden supply centers or large variety stores, or mail-order catalog is either dolomitic or dolomite limestone (made up almost entirely of calcium carbonate) and is intended to raise soil pH. Limestone is mined from limestone quarries.
- Sulfur refers to elemental sulfur and although sometimes is hard to locate, it can be purchased from garden centers, mail-order garden suppliers, and chemical distributors. Some individuals may be sensitive to sulfur so handle with care.

COMPOSTING

Follow these five easy steps to make sure you're composting correctly.

The Five Essentials:

1. Feed your compost a balanced diet of browns (carbon) and greens (nitrogen).
2. Smaller pieces are easier to break down. The more surface area accessible to the micro-organisms and worms in your pile, the faster your organics will turn to compost.
3. Make sure that there is plenty of oxygen circulating through the pile. Keep the pile aerobic by turning or poking the pile once a week.
4. Micro-organisms and worms get thirsty too! Your pile should always be as moist as a wrung out sponge.
5. A pile that is at least 3'x3'x3' has the ability to retain heat. This keeps your primary comfortably warm and eager to eat!

Tips

If your pile smells like eggs or sulfur, the pile might be anaerobic (without air). Try turning or poking the pile and adding some browns (dried leaves, etc.) If your pile doesn't seem to be decomposing, the pile might need some more greens (vegetables/fruits scraps, plant material etc.). Or it might need to be watered if it doesn't seem to be as wet as a wrung out sponge. While correctly maintained compost will not attract rats, it's prudent to use integrated pest management techniques.

What's done is done...

You will know when a pile is 'finished' when it appears dark, earthy looking, crumbly matter. The compost has stabilized and is ready to use. To verify, place a sample of your product in a plastic bag. Add a few drops of water, seal the bag, and leave it for a couple of days. If there's no smell when you open the bag, your compost is ready to use. If a pungent, ammonia-scented breeze wafts up at you, give your compost a little more time to cure.

If you have any questions about composting contact GreenThumb or:

NYC Compost Project in the Bronx
The New York Botanical Garden
Bronx River Parkway at Fordham Road
Bronx, NY 10458-5126

Compost Helpline: (718) 817-8543
email: compost@nybg.org
http://www.nybg.org/green_up/comp_programs.php

Information provided by the New York Botanical Garden's Bronx Green-Up Compost Project

STARTING SEEDS INDOORS

Materials

- Seeds
- Seed-starting mix
- Seed-starting tray or containers with holes in the bottom
- Wood or plastic labels (to write the type of seed and date planted)
- Bottom-watering tray (a flat-bottomed tray without holes)
- Humidity cover
- Watering can and spray bottle
- Light (sunny window or fluorescent light)

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Sowing Seeds

1. Moisten the seed-starting mix-it should be wet like a damp sponge.
2. Fill a tray or containers with the mix, making sure to fill each cell. Use an empty cell pack tray or your fingers to press down on the mix; be careful not to pack it too tightly. Run a pencil or ruler over the top of the tray so that the medium is level with the lip of each cell.
3. Prepare the seeds if necessary-some may need to be scarified or stratified. Follow the directions on the seed packet. **Scarification** is scratching the seed coat so that it can more easily absorb water. **Stratification** is exposure to either a cold or hot period. The instructions on the seed packet will specify the appropriate amount of time.
4. Using your fingers, make holes in the seed-starting mix of each cell to the correct planting depth, according to the seed packet. The general recommended depth is at least 2 to 3 times the width of the seed. Space the seeds as instructed on the seed packet.
5. Place your seeds into the holes and cover them with seed-starting mix to fill the holes..
6. Label your trays with a permanent marker. The label should include the type of seed, the date you planted it, and the day it germinates.
7. After everything is labeled, place the seed-starting tray into a second, flat-bottomed tray, one without holes. Fill this bottom tray with water so that the seed-starting mix absorbs the water from below. When the mix has absorbed the water and it seems saturated, empty out the excess water.
8. Place a clear plastic cover over the seed-starting tray to keep in moisture. Either place newspaper over the top of this humidity cover or place the entire tray in a dark location. Most seeds need darkness to germinate, and afterward they need light to grow. So remember to remove the cover once the seeds have germinated.
9. Make sure your seedlings receive sufficient light. This means 8-10 hours per day. It is best is to provide supplemental artificial light. Standard fluorescent tubes work well if plants are kept within a couple of inches of the light source. You may also place your plants close to a sunny window if you have no fluorescent light.

Watering

Water plants from the bottom: Use a watering can to pour water into the bottom tray. Use a spray bottle to mist seedlings from the top. Use water that is at room temperature; cold water can slow the germination and growth processes. Keep the trays moist but not too wet.

Fertilizing

Do not fertilize your seedlings until they develop their first true leaves—those that resemble the leaves of a mature plant. Use just half of the recommended dose, and give these diluted feedings about every two weeks.

Seedling Diseases

The warm, humid conditions that promote germination and seedling growth are the same conditions that foster a fungal disease called damping off. This can happen if seeds or seedlings are over watered, too crowded, or poorly ventilated. When damping off occurs, the seeds tend to rot or the seedlings shrivel and collapse. If this happens, it's best to just throw them away and start over with new seeds. If you plan to use the same containers, sterilize them first to destroy all traces of the fungus. To sterilize, soak containers in a 10 percent bleach solution and scrub off any large chunks of dirt or debris. Allow the pots to air-dry before using them. To help prevent damping-off, or if you suspect that soil is the cause, you can use a barbecue grill or oven to heat the soil to a temperature of 140 degrees for a couple of hours to kill any disease spores.

Transplanting

Transplant seedlings to a larger container when they become overcrowded, which can make them . weak, susceptible to disease, and unequal in size.

Getting Ready for the Garden

After the danger of frost has passed (in New York City this is generally by April 15), it is safe to transplant your seedlings into the garden. As they have been protected and sheltered indoors with warm temperatures, it is important to first acclimatize them to the outdoor temperatures. Keep the plants outside for two hours per day and gradually increase the time to a full day over the course of a week or so. This process is called hardening off.

Into the Garden

The day before transplanting the seedlings, water them well; this helps limit the shock of transplanting and ensures that your seedlings are turgid (sturdy). Also, remember that the seedlings are still fragile; transplant them in mild conditions—low light, mild temperature, and low wind.

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Why won't my seeds germinate?

Most seeds will germinate if given water, an appropriate seed-starting mixture or soil (if sowing directly outdoors), and warmth. Most seeds also need complete darkness to germinate, but check your seed packet to be sure, as there are exceptions. However, here are some reasons why you might have trouble.

Water — Some hard-coated seeds such as morning glories, corn, and beans may need to be soaked in water to speed up germination. In addition, the seeds of many desert plants need to be immersed in water to remove an inhibitor that stops them from germinating during dry spells.

Soil or Seed-Starting Mix Conditions — Seeds may not germinate if the soil or seed-starting mix is too wet or too cold or has been allowed to dry out. Compacted soil or seed-starting mix also can prevent germination; this is why seed-starting mixtures usually contain light, loose materials.

Temperature — Most garden seeds germinate best indoors with temperatures between 65 and 75 degrees Fahrenheit. Annuals that come from tropical climates generally can germinate at any time. Plants from colder climates germinate in the spring and must go through a cold period. Alternately applying cold and warm temperatures encourages certain seeds to germinate. This process is called stratification.

Light — Some very tiny seeds such as lettuce need to be on the surface of the seed-starting mix or soil as they do not have the energy to push up through the medium; they will not germinate without light. The seed senses the light by a pigment called phytochrome.

Seed Coat — Some seeds have a very hard seed coat, which water can't penetrate. Sometimes you need to cut or nick the seed coat with a knife or with sandpaper. In extreme cases, like with the Kentucky coffee tree, sulphuric acid is used. The cutting of the seed coat is called scarification.

Viability — A seed may not germinate because the embryo is damaged or incomplete or the seed has been stored too long or under poor conditions.

Timing — Some large seeds such as acorns or horse chestnuts take a long time to germinate, sometimes up to two years. In the first year they produce a root, and in the following year cotyledons (seedling leaves).

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INTENSIVE GARDENING

More Vegetables from Less Space

- Succession Planting
- Intercropping / Interplanting
- Vertical Planting / Trellising
- Close Spacing

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Trellises

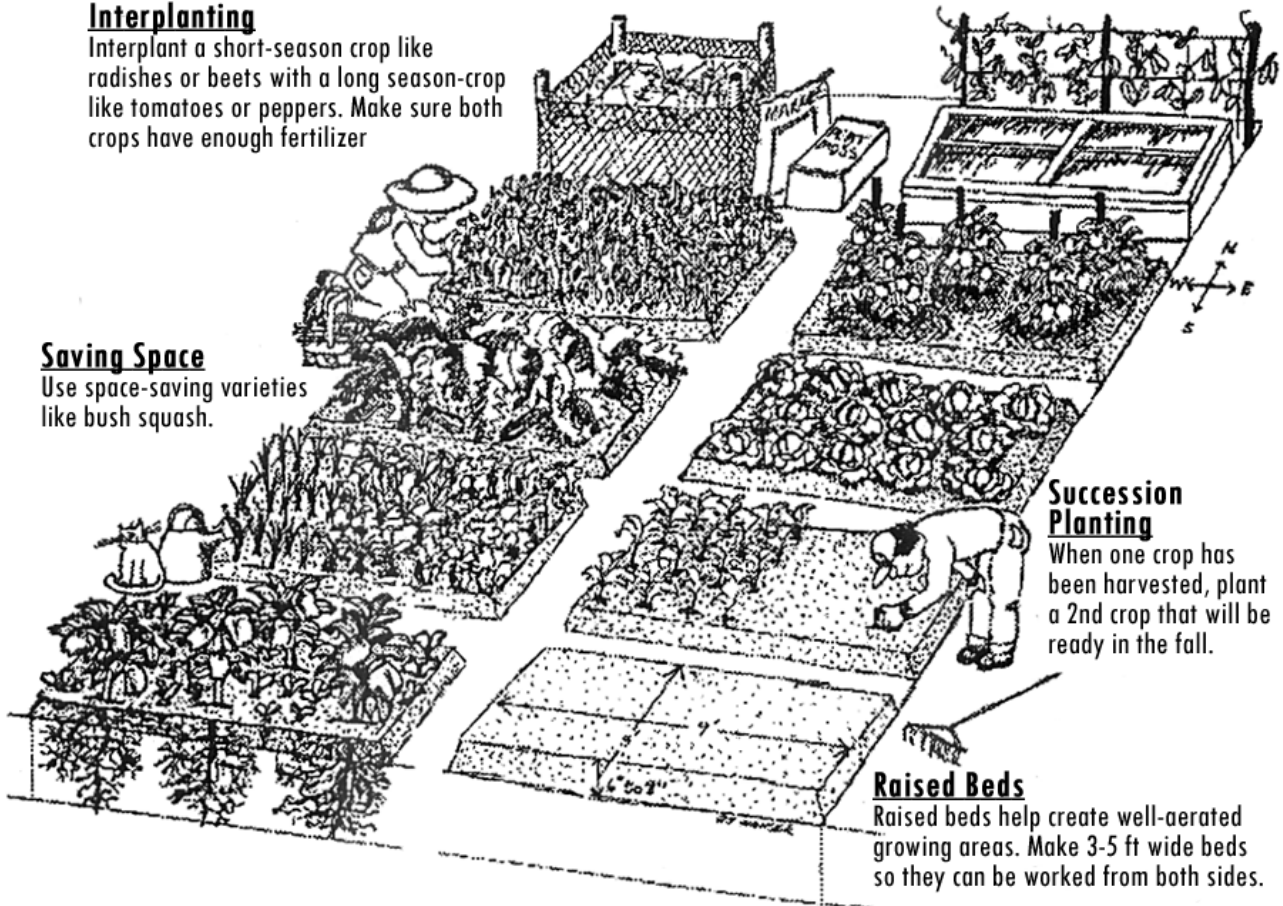
Save space by trellising and staking vine crops like pole beans and cucumbers

Interplanting

Interplant a short-season crop like radishes or beets with a long season-crop like tomatoes or peppers. Make sure both crops have enough fertilizer

Saving Space

Use space-saving varieties like bush squash.



Succession Planting

When one crop has been harvested, plant a 2nd crop that will be ready in the fall.

Raised Beds

Raised beds help create well-aerated growing areas. Make 3-5 ft wide beds so they can be worked from both sides.

Succession Planting

- The purpose of succession planting is to prevent large areas of the garden from being unproductive.
- Succession planting is made up of two essential techniques.
- The first technique is planting the same crop in different parts of the garden at different times. For example, two rows of bush beans planted three weeks apart.
- By staggering the planting dates your harvest season lasts longer. Instead of being overwhelmed with a certain crop, you will have a convenient supply of fresh produce.
- The second technique is to plant either the same or different crops one after the other in the same row. For example, brussels sprouts after early peas have been harvested, squash after early beets or, beans after beans.
- Re-planting the same areas will help to keep all parts of the garden in production throughout your growing season.
- Try planting something new from week to week. This cycle can start with the first cold-hardy greens in late winter/early spring, to the warmer season crops like tomatoes, peppers and eggplant. Then start all over again by planting frost-hardy crops from late summer all the way through mid-fall.

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Intercropping

- Fast and slow maturing crops can be combined in the same row to increase productivity.
- Interplant crops that grow quickly (like radishes, which mature in three weeks) with crops that have a longer growing season (carrots). The two crops can be seeded at the same time.
- Other examples include loose-leaf lettuce planted between cabbages. The lettuce can be harvested in about 45 days, well before the cabbage is big enough to crowd it. Onion sets for harvesting as scallions can be planted among tomatoes, etc.
- In Native American tradition: try planting the three sisters (corn, beans, and squash). Plant the beans and squash below the corn; corn provides support for the beans and squash shades the soil.
- Intercropping can also prove beneficial for pest control. (See Companion Planting T.S.)

Vertical Planting / Trellising

- Many plants that naturally sprawl can be grown vertically on stakes, trellises or fences to make the most efficient use of space in your garden.
- In urban gardens where space is limited, trellising will allow you too grow more food in a small space.
- The fence that surrounds the garden can double as a trellis.
- Trellises can be made of many materials, found and purchased.
- Be sure to have your trellis up and ready to go long before the plant needs the support.
- Staked or trellised vegetables should be planted on the north side of low growing plants so as not to shade them.

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Close Spacing

- Seed companies and gardening books usually recommend leaving enough space between rows to allow a mechanical cultivator to pass, but a gardener who cultivates his/her plot by hand can increase yields by crowding the vegetables somewhat.
- Radishes and carrots, for example, can be planted in such close proximity that they almost touch each other.
- Other examples include kale, peppers and cabbages, which will flourish only a foot apart.
- Crowding may diminish the yield per plant, but the yield of the entire row/bed will be increased.

ORGANIC PEST CONTROL FOR VEGETABLE GARDENS

Healthy plants with a good diet of nutrients are less likely to become diseased or infested by insects than stressed plants. In fact, about 90 percent of insect attacks occur on already distressed plants, according to author John Jeavons, and poor-quality soil is usually the source of the problem. Remember, too, that not all insects are bad—only a small percentage of insect species cause severe problems to vegetable plants. If you see signs of damage, try to identify the insect and notice how many there are to determine if you actually have an infestation.

The following first steps are environmentally sound ways to help prevent pest problems. They are good gardening practices in general and are known as **cultural controls**.

- **Choose the right plant for the site.** Plants well-suited to the soil, moisture level, sunlight, and other conditions of your garden, such as native plants, can resist pests and will grow healthier overall.
- **Choose disease- and insect-resistant crops.** Seed catalogs usually make note of these varieties in plant descriptions. For example, some vegetables have good resistance to pest nematodes, microscopic worms that feed on plant roots and tissue.
- **Rotate your vegetable crops.** Plants in the same family* (for example, broccoli and kale are in the Brassica family) tend to be susceptible to the same pests. So each season rotate these plants around the garden, making sure not to grow a plant from the same family in the same place as before.

** Plants are scientifically classified into different groups for easier identification. A family is a group of plants whose members resemble one another in certain respects.*
- **Mix your plantings rather than planting in rows.** Many insect pests are attracted to certain plants and will attack an entire row if they can easily move from one plant to another. Interplanting with flowers or vegetables of a different variety can help to avoid an increase in pest populations. Also, mix plants of different shapes and sizes to avoid shading out and to save space.
- **Plant perennials nearby.** Use older plants, often perennials, with a well-developed aroma to help confuse or distract pests from your crops. Perennial herbs such as lavender have shown to be successful. Testing several herbs will help you see which are effective in the New York City area; some herbs may work better than others.
- **Attract beneficials.** Grow flowering plants that provide pollen and nectar to attract to your garden beneficial insects, those that feed on pests. Plants that attract beneficials include goldenrod, mints, sunflowers, dill, and cilantro.
- **Water properly.** Plants that are watered when needed are less susceptible to pests and diseases.

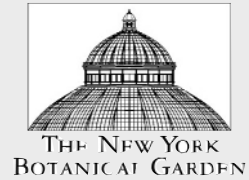
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- Keep your garden clean. Insects and diseases may overwinter in plant debris. Gather up spent and harvested plants and add them to the compost pile, but discard diseased plants in the trash.
- Plant at the right time. Some vegetables such as potatoes and cilantro prefer cooler weather. Know the best time to plant certain plants so that they thrive in the right conditions.

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If you suspect you have a pest problem in your garden, your next step is to identify the culprit. If you spot the insect or animal, look it up in a book or on the Internet. If you see only the damage to the plant, look up common pest problems associated with the type of vegetable affected.

Physical controls are steps you can take once you have identified a specific pest problem.

- **Handpicking** often works best on slow insects and those still inside eggs. This is a guaranteed organic method of insect control—you pick off and squash the culprit! **For example**, you might see a white cabbage moth flying around your cabbage, kale, or collards. If you can't catch it by hand, look for the cabbage worm (an earlier life stage of the moth that is greenish in color and blends right in with the cabbage plant). Look for holes in the leaves or droppings as a sign of the pest.
- **Create places for insects to gather** to make it easier to find and eliminate them. Slugs will gather under a board, cucumber beetles will congregate under wilted squash vines, earwigs will go into a tube of rolled newspaper.
- After you have hand-picked or collected gathered pests, **drown insects in soapy water**. You can then dispose of them in your compost pile.
- **Create barriers**. Row covers, made of thin, lightweight polyester, let sunlight and water reach plants but not insects. For plants that require cross-pollination, you will need to remove the row covers for a few hours each day. Other barriers include: plastic collars to prevent cutworms (a type of caterpillar) from eating plant stems; root maggot shields (tarpaper placed at the base of plants to prevent cabbage maggot flies from reaching the soil to lay eggs); and tree wraps and fruit bags (protective bags placed over fruit as they ripen).
- **Set out traps**: Different ones are needed for different pests.
 - ▶ Aphids, thrips, and whiteflies are attracted to color yellow. Apply Tanglefoot (or other sticky coating) to a painted yellow board and place at foliage level. The pests will fly to the yellow board and get stuck.
 - ▶ Slugs are attracted to alcohol. Set out a cup of beer or a dish of sugar water and yeast in a hole that is level with the ground
- **Spray them with water**. A strong spray from a hose will knock off aphids and spider mites.
- **Remove all signs of pest damage**. Cut out damaged portions of the leaves and gently spray off droppings with a hose. By doing this, even if you missed a pest, you will see new signs of damage and be able to take action.

ORGANIC REMEDIES FOR DISEASE AND PEST PROBLEMS

Homemade Insect Spray

(reprinted with permission from Organic Gardening magazine)

This spray helps protect against cabbage worms, caterpillars, tomato hornworms, aphids, and other pests. Use gloves when handling hot peppers, and avoid contact with your eyes.

Ingredients

- 6 cloves garlic, crushed
- 1 onion, minced
- 1 tablespoon dried hot pepper (powder works well)
- 1 teaspoon pure soap (vegetable-based is safest; do not use detergent)
- 1 gallon hot water

Blend garlic, onion, pepper, and soap in hot water and let the mixture sit for a day or two. Strain before using. Spray on foliage, both above and below, to get the underside of the leaves. Be aware that sprays that kill harmful insects will also kill beneficial insects. Use these homemade remedies selectively, only spraying the infected plants. Apply them early in the morning or just before dark. Reapply after a rain.

Note

Water is the carrier, soap makes the spray stick, and the plant juices from the garlic, onion and hot pepper are the active ingredients that fight pests.

Compost Tea

Compost tea can help fight fungal diseases like powdery mildew and Botrytis blight.

To make compost tea:

1. Place 1 gallon of well-aged compost in a 5-gallon bucket and fill with water.
2. Set in a warm place for three days.
3. Filter the mixture through a screen or cloth (such as burlap or cheesecloth) and return the solids to your compost pile.
4. Place the liquid in a sprayer or watering can.
5. Pinch off any heavily diseased leaves before applying the tea to the plant.
6. For best results, use the treatment in the evening, when leaves are likely to remain damp for several hours.
7. Sometimes a single treatment will not stop the disease. Check the plants every 3-4 days and repeat the application if necessary.

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PLANTING FOR A FALL HARVEST

Many vegetables for Fall Harvest should be sown or transplanted during the summer months. Our area is fortunate to have the longest growing season in New York State and the cool days and nights of Fall provide ideal conditions for growth and development of Fall crops (see next page).

Planting times should correspond to harvesting vegetables around the time of the first frost in this area (October 20), even though Harvest can extend well up to Thanksgiving.

Number of Days until First Frost

| | | |
|-------------|-----|---------|
| September 1 | ... | 50 Days |
| August 15 | ... | 66 Days |
| August 1 | ... | 81 Days |
| July 15 | ... | 97 Days |

An excerpt from
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 (See page 91 for
 more info)



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| | CROP | DATE TO PLANT |
|------------------------------|--|---|
| Cole | Broccoli, Cabbage, Cauliflower, Collards | Seed: July 15-30; Transplant: august 15-20 |
| | Kale, Kohlrabi, Mustard | Seed: Aug 1-20 |
| | Brussels Sprouts | Seed: July 1-10; Transplants: July 15-30 |
| Leafy Greens | | Seed: Aug 15 - Sep 1; Transplants: Sep 1-10 |
| Root | Beets, Root Carrots, Turnips | Seed: Aug 15 - Sep 1 |
| | Radish | Seed: Aug 1 - Sep 30 |
| | Rutabaga | Seed: Aug 1-15 |
| Bush-Beans & Peas | | Seed: Aug 10-20 |
| Oriental Vegetables | | Seed: Aug 1-20 |

COOL SEASON CROPS

| CROP | SEED (S) OR TRANSPLANT (T) | DAYS TO HARVEST | MINIMUM SPACING IN ROW | IDEAL TEMP RANGE (°F) |
|------------------------------|-------------------------------|-----------------------|---------------------------|--------------------------|
| Cole Crops | | | | |
| Broccoli | T | 70-90 | 16" | 40°-75° |
| Brussels sprouts | T | 85-105 | 16" | 40°-75° |
| Cabbage | T or S | 60-90 (T); 90-120 (S) | 12" | 40°-75° |
| Cauliflower | T | 65-80 | 16" | 40°-75° |
| Collards | T or S | 55-65 (T); 70-80 (S) | 12" | 40°-75° |
| Kale | S | 50-70 | 8" | 40°-75° |
| Kohlrabi | S | 50-70 | 8" | 40°-75° |
| Mustard | S | 40-50 | 8" | 40°-75° |
| Leafy Greens | | | | |
| Chard | S | 45-55 | 6" | 40°-70° |
| Corn Salad | S | 40-50 | 6" | 40°-70° |
| Cress, upland | S | 45-55 | 4" | 40°-70° |
| Cress, Garden | S | 40-50 | 41" | 40°-70° |
| Endive | S | 80-100 | 6" | 40°-70° |
| Lettuce, Coz. | S | 50-60 | 6" | 45°-75° |
| Lettuce, Head | T or S | 75-95 (T); 95-115(S) | 12" | 45°-75° |
| Lettuce, Leaf | S | 35-45 | 4" | 45°-75° |
| Parsley | S | 70-90 | 2" | 45°-75° |
| Spinach | S | 40-50 | 4" | 40°-70° |
| Root Crops | | | | |
| Beets | S | 50-65 | 3" | 40°-75° |
| Carrots | S | 55-80 | 2" | 45°-75° |
| Radish | S | 25-35 | 2" | 40°-70° |
| Rutabaga | S | 80-90 | 4" | 40°-70° |
| Turnip | S | 40-60 | 4" | 40°-70° |
| Fruiting Crops | | | | |
| Beans, Bush | S | 50-60 | 4" | 50°-80° |
| Peas | S | 60-80 | 3" | 45°-75° |
| Oriental Crops | | | | |
| Chinese Broccoli (Gai Lohn) | S | 60-80 | 6" | |
| Ch. Celery Cabbage (Pe-Tsai) | S | 70-90 | 14" | |
| Ch. Mustard (Bok Choy) | S | 40-60 | 6" | |
| Ch. Radish (lo Bok) | S | 45-80 | 2" | |

COVER CROPPING BASICS

Cover Crop — Any plant species or mix of species, usually grasses or legumes, grown to cover, protect, and improve the soil. Cover crops are usually planted in the fall and are either killed by cold weather or are mowed and dug in the following spring.

Benefits of Cover Crops

- Adds Organic Matter.** Feeding the Soil Food Web. Healthy soil is full of life: microscopic bacteria, fungi, protozoa, nematodes, etc. All of which eat decaying matter and release plant-available nutrients.
- Adds Nitrogen.** Nitrogen is a big player in plant growth.
- Improves Soil Structure.** Protects and lightens soil, adds air pores, and prevents soil compaction over the winter.
- Provides Weed Control**
- Holds and Contributes to the amount of Soil Nutrients**

Rules of Thumb

- Roughly dig and remove large weeds and level soil before planting a cover crop.
- Before an early spring crop (such as peas or spinach), choose a winter-killed cover crop such as oats and before a summer crop (such as corn or tomatoes), choose a winter hardy cover crop such as vetch or rye.
- Add compost before planting your fall cover crop or in the spring before mowing.

Green Manure — A cover crop from the legume family, such as hairy vetch, any clover, or field peas, grown to add Nitrogen to the soil.

- Basics of nitrogen fixation: bacteria do a miraculous thing**—take (N) gas from atmosphere and make it usable for plants.
- Make sure the right types of bacteria are in the soil;** compost helps add proper amounts of bacteria.
- How to maximize the N contribution:** general rule of thumb is to get it while it's still green!
 - ▶ For annual legumes, N fixation continues until flowering. (example: alfalfa or white clover)
 - ▶ For perennial legumes, N fixation continues throughout their life cycle. (example: soy beans)

Undersowing — Practice of planting a cover/green manure crop under another crop, this allows your bed be productive while reaping the benefits of cover cropping.

- Benefits:** same as for any cover crop, but can extend the period of time that a cover crop is growing and, if its a green manure, the time it's fixing Nitrogen
- 4-5 week rule.** Plant undersown crop 4-5 weeks after main crop
- Mix plants w/ complementary growth habits.** For example, tall main crops with low-growing undersown crop.

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GREEN MANURES & COVER CROPS

| CROP | SEEDING RATE (LB./100 SQ.FT.) | WHEN TO SOW | WHEN TO TURN UNDER | SOIL TYPE |
|---|-------------------------------|-----------------------------------|-------------------------|--|
| Alfalfa | 0.3 | Spring | After 2 yrs. | Fertile loam, well-limed, well-drained |
| Buckwheat | 0.25 | Early Summer | Late Summer | Widely adaptable |
| Clover, alsike | 0.25 | Spring | Fall | Tolerates acidic & poorly drained but not, sandy |
| Clover, red | 0.275 | Late Spring / Summer | Following Spring / Fall | Fertile loam, slightly acidic/neutral |
| Clover, ladino | 0.3 | Late Spring / Early Summer | Following Spring / Fall | Sandy loam - Medium loam |
| Millet, Japanese | 0.75 | Late Spring / Early Summer | Late Summer / Fall | Loam relatively fertile, tolerates low pH |
| Oats | 2.5 | Early Spring / Late Summer / Fall | Fall, Following Spring | Widely adaptable to pH and fertility |
| Rye, winter | 2.5 | Late Summer / Early Fall | Spring | Widely adaptable to pH and fertility |
| Ryegrass, Italian | 1.0 | Spring / Fall | Fall, Spring | Widely adaptable to pH and fertility |
| Sudan grass & sorghum-Sudan-grass hybrids | 0.75 | Early Summer / Summer | Fall | Widely adaptable to pH and fertility |
| Vetch, hairy | 1.25 | Spring | Fall | Widely adaptable to pH and fertility |
| Wheat, winter | 2.5 | Late Summer / Early Fall | Spring | Widely adaptable to pH and fertility |

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SEED SAVING

This ancient practice dates back to the Stone Age. As our ancestors transitioned from hunting and gathering to farming, they would select seeds for replanting the next season. For today's gardener, seed saving...

- Saves money
- Allows you to grow plants that have adapted over time to local conditions
- Preserves varieties that are part of human history
- Builds self-reliance: You control what you grow and eat.

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Harvesting Seeds

- Fruits, berries, and seeds embedded in the flesh of fruits are usually collected in plastic buckets, deli containers, or bowls.
- Seed pods are best collected in baskets, which allow better air circulation for further drying. However, paper bags, feed sacks, and cardboard boxes can also be used.

Two Ways to Clean Seeds

Wet Process — for seeds in the flesh of fruits or berries such as tomatoes, cucumbers, and melons.

1. Cut open the fruit and remove the seeds.
2. Wash the seeds. Place the seeds with pulp in a large bowl or bucket. Add twice as much water as the seed/pulp mix and stir vigorously. Good, productive seeds are more dense and will sink to the bottom, whereas poor quality seeds tend to float. Pour off the floating seeds and debris and add more water. Repeat the process until only clean seeds are left. Then pour them into a strainer and wash under running water.
3. Dry the seeds. Wipe the bottom of the strainer to remove as much moisture as possible. Then thinly spread the seeds onto a glass or ceramic dish, cookie sheet, window screen, or sheet of plywood. Do not dry on paper or flexible plastic as the seeds may stick. It is important to dry seeds as quickly as possible, because warm, wet seeds will start to germinate or mold. Stir the seeds several times a day. Damage can occur if the temperature of the seeds gets above 96°F, so never dry seeds in an oven.

Dry Process — for plants that produce seeds in pods or husks such as beans, peas, and radishes

1. It is preferable to allow the pods to dry on the plant and then harvest them individually.
2. You may also pull out the whole plant with its seed pods (especially if a frost might occur), and then hang the whole plant to dry. As the plant dies, the seeds continue to mature and gain strength.
3. To remove the seeds from their coverings (the process is called threshing), put the seed pods in a burlap sack or pillow case and shake so that the pods crack open. For smaller seeds, mash the pods between two boards, being careful not to rub too hard, which can cause the seeds to split or break.

Seed Storage

After the seeds have dried thoroughly, it is important to store them properly, in airtight storage containers so that they stay dry and keep longer. Airtight storage containers maintain the seed's vigor—its ability to germinate rapidly and with good resistance to disease. High temperatures (greater than 100°F) and moisture are the enemies of stored seeds.

Glass and metal are the only containers that are completely moisture proof. Baby food jars (with a good rubber seal) and canning jars work well.

Store your airtight containers in a cool, dark, dry place. Locations at floor level are better than near the ceiling, because temperatures will be cooler.

Remember to label your seeds. Multiple packets of seeds can be put in plastic bags or envelopes, then put in an airtight container

Seeds of all species can be stored for many years with almost no loss of germination and minimal loss of vigor when sealed in an airtight container and frozen. However, the seeds *must be dry*—moisture expands when frozen and breaks down cell walls.

Record Keeping

Gardeners who grow their own vegetable seeds need to keep good records of seed sources and plant characteristics. An easy way to do this is with an index card file with dividers that tell the type of plant in each section.

Each card should include:

- Type of plant
- Variety name (for example, purple bush bean)
- Name and address of the source of the seed
- Date you obtained the seed
- Date the seeds were stored
- Year you last grew the plant
- History or cultural notes

You might also add growing information: days to maturity, grown from seed or transplant, diseases or pest problems, flavor and appearance.

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PRUNING

For gardens under the jurisdiction of Parks & Recreation:

No Gardener or their agent may cut, remove, rootslice or otherwise damage a tree on or adjacent to the site without prior authorization from GreenThumb.

The exception to the policy regards routine pruning. Gardeners who have completed the "Citizen Tree Pruner" training or another recognized pruning training from the botanical gardens, or Tree Trust may handle basic pruning needs in the garden. Copies of these course records should be forwarded to the GreenThumb office to become part of the permanent record for your garden. Go to our website for Tree Removal Protocol.

The Benefits of Tree Pruning: A Mini-Guide

The following is adapted from material distributed by The New York Botanical Garden.

Pruning is the removal of branches from a tree, bush, or plant. Appropriate pruning is essential to the health of your trees and shrubs. When properly done, it stimulates and redirects new growth, rejuvenates old growth, prevents future problems, increases production, and improves the overall health and longevity of the tree or shrub.

Before you prune, however, you should consider when, how, and why to prune. Here are a few simple guidelines:

1. Know your plant's growth pattern and flowering time. Prune at the appropriate time of the year.
2. Choose the appropriate tool for the size of your plant.
3. Always prune crossing, dead, and diseased branches promptly. This can be done at any time of the year.
4. Make a clean cut without leaving ragged edges or crushed bark behind.
5. Put safety first. If the task is too large to be done on your own, ask for help.

If you'd like to learn more about pruning, here are some books to check out:

- *American Horticultural Society Pruning & Training*
A comprehensive guide with superb illustrations
- *Royal Horticultural Society Pruning*
A handy, compact guide with step-by-step drawings
- *The Pruning Book* by Lee Reich
A good home gardener's guide to pruning, with a great section on fruit trees
- *An Illustrated Guide to Pruning* by Edward Gilman
A professional's tree pruning reference
- *The Well-Tended Perennial Garden* by Tracy DiSabato-Aust
Discusses the importance of pruning herbaceous plants

The New York Botanical Garden in coordination with GreenThumb offers a free pruning certification course each fall and spring. By completing a pruning certification course, you become eligible to receive free pruning tools if you are with a registered GreenThumb garden. If you would like to sign up for the next pruning certification workshop, please call the New York Botanical Garden at (718) 817-8700 or refer to their website (www.nybg.org). Trees New York also offers a similar course (www.treesny.com/programs.html). Additional information related to pruning may also be obtained by contacting the New York Botanical Garden.

A BEGINNER'S GUIDE TO BUTTERFLY GARDENING

This ancient practice dates back to the Stone Age. As our ancestors transitioned from hunting and gathering to farming, they would select seeds for replanting the next season. For today's gardener, seed saving...

- Saves money
- Allows you to grow plants that have adapted over time to local conditions
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Life Cycle of the Butterfly

- Fruits, berries, and seeds embedded in the flesh of fruits are usually collected in plastic buckets, deli containers, or bowls.
- Seed pods are best collected in baskets, which allow better air circulation for further drying. However, paper bags, feed sacks, and cardboard boxes can also be used.

What Do Butterflies Need?

Nectar Plants and Host Plants

A butterfly has different food requirements during the different phases of its life. All adult butterflies depend on nectar plants as their food source; females search for host plants on which to lay their eggs; and growing caterpillars feed on the host plants.

Certain butterflies need specific plants, while other butterflies can feed off a larger variety of plants. Native plants are important to a butterfly garden, since they are familiar sources of nectar and food for caterpillars. Some cultivated varieties of native plants do not produce as much nectar as the wild forms. (The butterflies that are native to the Bronx and their nectar and host plants are listed below.)

Minerals and Water

Butterflies need water and salt and other minerals, which can be found in mud puddles, dung, or rotting fruit. You can create a mud puddle by making a small depression in the ground, lining the edges with pebbles, and adding water each morning. It is best if the puddles dry out by the end of the day.

Shelter

Butterflies also need shelter from the wind and inclement weather, a place to form their chrysalis, and a safe spot to spend the winter. Trees, large shrubs, or hedges form windbreaks. Leaf litter, old logs, and branches provide protected places to overwinter. Bushes, tall grasses, and piles of leaves or sticks are ideal areas for cocoons.

Plenty of Sunshine

Butterflies need to be warm in order to fly. Choose a sunny and protected place for your butterfly plants. Large, flat rocks placed in the sun will also provide a place for butterflies to warm themselves. Sunny spots are also good for eggs and caterpillars to mature more rapidly.

No Pesticides

Pesticides can kill butterflies and caterpillars, which are extremely sensitive to toxins.

CONSERVING WATER

by Molly Culver, GreenThumb, Farm School NYC

How and When to Irrigate for Stronger Crops and Water Conservation

NYC has an average monthly rainfall of four inches during the growing season. While we often cannot control how much water our crops receive and when they receive it, it is good to keep the following principles in mind. Knowing more about soil's relationship with water and individual crops' water needs will help you make good choices about watering. In the end, we as community gardeners will help conserve more water in NYC and also grow healthier, stronger crops and more fertile soil.

Check the Weather! Water According to Air Temperature and Humidity

First and foremost, check the weather report—if a significant rain is coming, there's no need to water. A stretch of cool or cloudy days will also reduce the need to water. A good website to use is the National Oceanic and Atmospheric Association (NOAA): www.noaa.gov. Timing is everything: if you time your watering wisely, most of the water will get to the plants, and not evaporate through the soil surface. Water does not evaporate as quickly in cooler temperatures. Water in the cooler parts of the day (early morning and late afternoon/evening) so your plants get more of the water you give them. A good rule of thumb is to water before 10am and after 6pm in the warmest months of the year. Early morning watering gives plants time to dry off so fungus and mildew cannot grow over night.

Water Based on Soil Type and Soil Moisture Level

Know your soil type and its moisture-holding capacity. Is your soil more sandy or more clay-like? Clay soils can retain moisture for up to two weeks, while sandy soils may drain within a couple of days. Be aware of Check your soil's moisture level before you water! Dig down to the root zone of your crops with your hand or trowel. If you have a clay soil, you may decide to wait to water. If you have a sandy soil, you may need to water more frequently.

Amend your Soils to Increase their Moisture-Holding Capacity

By adding compost to sandy soils, you will increase that soil's ability to retain moisture.

Do a Squeeze Test to Determine Soil Moisture

Dig down a few inches and grab a handful of soil. Sandy soil needs water when it won't form a ball. Loamy soils (a mix of sand and clay) or clay soils need water when they won't form a ball unless squeezed.

Water According to Crop Type, Stage of Growth and Root Depth

Not all crops have the same water needs. Young crops need more frequent waterings to help get their roots established. Encouraging long, deep roots results in less work for you, as moisture is retained for longer at greater depths. That said, the natural rooting depth of mature crops varies from crop to crop. For example, mature tomato plants' roots can grow up to four feet, so you can let the soil surface dry down much farther before watering again. (However, if you have a created a physical barrier between your raised bed and the underlying soil, such as cardboard or plastic, you will probably need to water more frequently as raised beds tend to be only a foot in depth.) Shallow-rooted crops like lettuce or spinach, require more frequent watering—these plants are much more susceptible to drying out.

Rooting Depths of Mature Vegetables

- Shallow (18-24 inches): Brassicas, Celery, Corn, Garlic, Onions, Lettuce, Potatoes, Radishes, Spinach
- Moderately Deep (36-48 inches): Beets, Bush, Pole Beans, Carrots, Cucumbers, Eggplant, Peas, Peppers, Summer Squash
- Deep (Over 48 inches): Pumpkins, Tomatoes, Watermelon, Winter Squash

Prepare Your Soil Well to Conserve Water

Deeply dug, well-tilled soil results in greater absorption of water in the soil, and therefore in your plants. Good cultivation also results in stronger, deeper roots, and therefore more efficient water absorption in your crops. If you do not cultivate your soil well, water tends to pool on the surface, and then gets lost through evaporation.

How You Water Matters

Some crops, like lettuce, leafy greens, beets, carrots and other small crops benefit from overhead watering from a wand or sprinkler. Lettuce in particular enjoys a cool down on hot days from overhead watering. Other crops, like tomatoes, potatoes, squash, cucumbers and melons are susceptible to disease and so do not respond well to constant moisture on their leaves: to avoid spread of diseases like Late Blight and others, water these crops at the base of the plant using a wand, watering can or drip tape. If using a wand, don't put it on full blast: water that hits the soil's surface in a forceful way creates compaction and more water-pooling on the soil surface. Similarly, if you allow water to pool around your plants by turning on the wand and leaving it in the bed unattended, compaction occurs. Ideally, you want to see water continually absorbed into the surface without pooling. Good soil cultivation helps!

Plant Like with Like

Plant crops with similar water needs next to each other if you can. For example, plant lettuces, leafy greens and salad mixes together. Don't plant a tomato plant next to a lettuce plant—their water needs are very different. (Overhead watering the lettuce could result in a sick tomato plant). Another example: sow new seeds in a bed with maturing lettuces or leafy greens. Use a sprinkler to help keep the germinating seeds evenly moist, and to help keep the greens cool and happy!

Consider Drip Irrigation

While drip tape can be expensive, it helps conserve water by ensuring water goes straight to the root zone of your crops, and not in places where no crops are growing. By concentrating your water at the root zone, you avoid growing weeds in between rows—less work for you! Drip tape can last for many years, if handled well and stored properly in the off-season.

Use Mulches Around the Garden

Mulches reduce water evaporation and increase water conservation. Anything that covers the ground and blocks light can act like a mulch: wood chips, straw, landscape fabric, etc. Mulch should still allow for water and air to penetrate. Use mulches mainly for perennials and fruit trees. Create a "living mulch" in your vegetable beds by planting crops closer together so that the foliage acts as a shade canopy that helps slow evaporation through the soil surface.

Build a Rain Water Harvesting System

You can collect rain water funneled from rooftops adjacent to your garden into barrels or large containers. By collecting rainwater, you help decrease the amount of rainwater combining with waste water in NYC's sewage mains. On dry days, waste water goes directly to a treatment plant before being discharged into a water body. In periods of excessive rainfall, the amount of water (combined rainfall and waste water) exceeds the capacity of the treatment plant and waste water flows directly into NYC's Hudson River or other water bodies. By collecting rain water, you both conserve water and prevent further pollution in NYC's waterways. See "Rainwater Harvesting in Your Garden" to learn more about how to build and maintain a rainwater harvesting system in your garden.

RAINWATER HARVESTING IN YOUR GARDEN

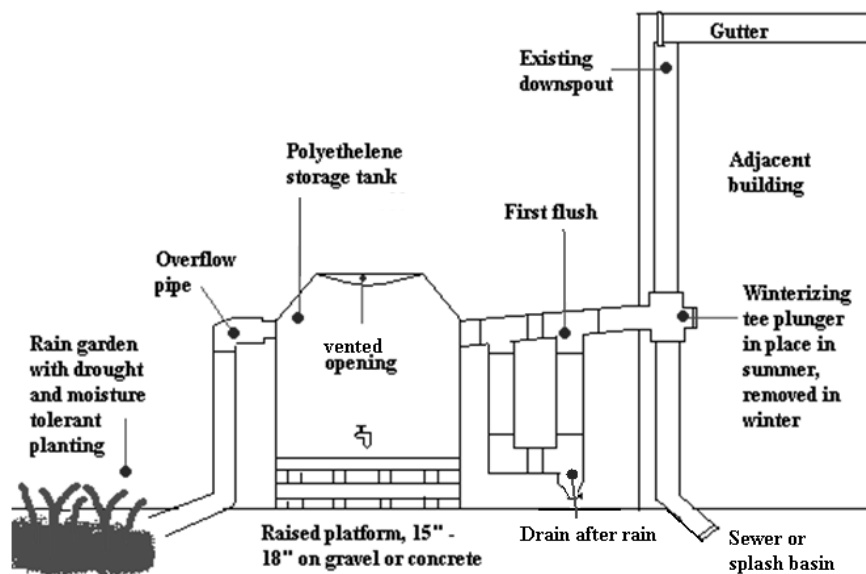
"It isn't easy to come up with 'one size fits all' instructions for building rainwater harvesting systems because of variations in styles of roofs, downspouts, storage tanks, and garden layouts. You have to use a combination of research, common sense, ingenuity, and dumb luck to design and build your system." - **Lenny Librizzi, Assistant Director of Open Space Greening at GrowNYC**

An excerpt from
GrowNYC's
Rainwater Harvesting 101 Guidebook



(212) 788-7900
www.grownyc.org/
info@grownyc.org

Rain water harvesting (RWH) is the means of collecting and storing rain water in large, durable containers, collecting from rooftop gutters. RWH systems come in a variety of shapes and sizes. RWH systems are fairly easy to construct. Average tanks in NYC community gardens range in size from 300 to 1000 gallons but can be as small as 55 gallons and as big as 10,000 gallons.



The RWH system includes 3 parts: the tank (1), the first flush (2) and the overflow pipe (3). During a rainfall event water from the gutter flows into the downspout. Instead of the water going into the sewer system, the rainwater harvesting system diverts the water into pipes. This diverter consists of a 3 way tee with a plunger in place during the summer. This plunger keeps the water from entering the downspout and forces it to flow into the harvesting system. It is taken out in the winter when rainwater is no longer collected (4). The pipes lead to a roof washer system which is a containment area for the first few gallons of water. Since the initial flushes of water contain rooftop debris and leaves, the roof washer acts as a filtering system by separating the dirty water from the cleaner water. Once the roof washer is full, the cleaner water enters the rain tank. Some systems use a screen filter instead of or in addition to a roof washer. As soon as the tank is full, excess water flows into the overflow pipe which leads to an adjacent rain garden (5), is directed back to where it originally flowed or piped underground. A rain garden is a plot containing hardy plants that can survive with both saturated and dry soil.

GREENTHUMB GARDENS WITH RWH SYSTEMS

| GARDEN | BOROUGH | ROOF SIZE (SQ.FT.) | TANK SIZE (GALLONS) | ESTIMATED WATER COLLECTION* (GALLONS) |
|----------------------------|---------------|--------------------|---------------------|---------------------------------------|
| Amazing Garden | Bronx | 1000 | 1000 | 17,000 |
| Backyard Garden | Brooklyn | 500 | 200 | 8500 |
| CAMPOS Garden | Manhattan | 150 | 343 | 2550 |
| C.A.U.S.A. Festival Garden | Brooklyn | 800 | 1000 | 13,600 |
| College Ave Garden | Bronx | 200 | 343 | 3400 |
| Culinary Kids Garden | Queens | 200 | 343 | 3400 |
| Fantasy Garden | Brooklyn | 350 | 343 | 5950 |
| El Flamboyant Garden | Bronx | 350 | 343 | 5950 |
| Hands & Heart Garden | Brooklyn | 244 | 343 | 4148 |
| Garden of Happiness | Bronx | 240 | 343 | 4080 |
| William A. Harris Garden | Manhattan | 1200 | 1000 | 20,400 |
| Joe Holzka Garden | Staten Island | 200 | 343 | 3400 |
| Phoenix Garden | Brooklyn | 1200 | 2000 | 20,400 |
| Red Shed Garden | Brooklyn | 150 | 343 | 2550 |
| St. John Cantius Garden | Brooklyn | 800 | 1000 | 13,600 |
| T&T Vernon Garden | Brooklyn | 200 | 343 | 3400 |
| Taqwa Garden | Bronx | 1000 | 1000 | 17,000 |
| Walt L. Shamal Garden | Brooklyn | 1200 | 1000 | 20,400 |
| West 104th St Garden | Manhattan | 1000 | 1000 | 17,000 |
| Wishing Well Garden | Bronx | 120 | 500 | 2040 |

* Based on average rainfall of 34 inches from March 1 to Oct 31 and .5 gallons of rain collected per square foot of roof area.

Rainwater Harvesting Systems built by Community Gardeners, Interns, Volunteers, City Year and Green Apple Corps with supervision by staff from GrowNYC (formerly Council on the Environment) under contract with GreenThumb, March 2009 - June 2010.

Additional Resources

How-to manual and video, map, descriptions and photos of existing RWH systems

<http://www.grownyc.org/openspace/rainwater>

Water Resources Group website

<http://waterresourcesgroup.blogspot.com/>

Source for RWH filters and tanks

<http://www.starkenvironmental.com/>

Rainwater manual and other useful RWH information

<http://www.twdb.state.tx.us/iwt/rainwater.asp>

For water tanks — Recycled 50-gallon food grade plastic barrels are available free or at low cost from food distributors. Larger tanks can be purchased from a number of sources. Note that up to 50% of the cost of a tank is shipping so it is worthwhile to comparison shop to find the lowest shipping cost. <http://www.tank-depot.com/>

PERMACULTURE IN GARDEN DESIGN

an essay by Claudia Joseph, Garden of Union (Annie's Garden)

Permaculture is a design philosophy based on a set of ethics and principles. The body of knowledge called permaculture was developed in the 1970s by two Australians, Bill Mollison and David Holmgren, and is now used in projects around the globe; repairing damaged land and meeting human needs. The ethics include the care of the earth (care of all living and non-living things: soil, species, atmosphere, forests, micro-habits, animals and waters) and the care of people (including the enrichment of our communities through sharing surplus material, time and knowledge).

Permaculture works because of good relationships between objects (and people) in the landscape, our respect for available resources and our ability to adapt and respond to changing conditions. It relies on well-developed powers of observation and active use of our imagination. Permaculture principles are tools for balancing social and botanical goals in our community gardens.

From a river flow to a flower, nature is organized into recognizable shapes, movements and characteristics. These patterns provide new ways to look at things, allowing us to organize our projects and thinking. Spiral, meander, branching, nesting and radiant patterns are some of the basic ones used. By arranging systems in the same way nature does, we can create economically, ecologically and socially productive systems.

To begin a permaculture design, a site analysis map is drawn. Note the condition of the soil, the drainage, location of water, the wind, the amount and direction of sunlight—include as many elements as can be observed. Remember the people: practice positivism and respect, embrace diversity and recognize all skills. Understand the relationship of people to garden, plant to soil, water to pathway, plant to plant, and so on. Sometimes, a problem can be turned into a solution if it is considered in a different way. By highlighting commonalities and differences, gardens can reflect the richest qualities of their community.

Resilience, abundance and good health rely on diversity and back-up support, so assign more than one plant or person to each need. Putting plants in the right place and allowing garden members to work where they are most skilled increases the sustainability level of our public green spaces.

"The gardener's shadow is the best fertilizer" is a common saying. It means that the more often we visit our gardens the more likely we are to notice problems and solve them while they are small. Trusting the garden design to evolve and making the least change for the greatest effect are two approaches that save energy and money. Reclaiming on-site materials to build soil is a common strategy. Good soil is alive with organisms that transfer nutrients to plant roots and help plants resist disease. For instance, layer green (nitrogen rich) material and dry brown (carbon) material to form sheet mulch beds to make living soil. Using green weeds and old leaves in the fall is a good way to have beautiful beds, ready to go in the spring. Inserting pockets of soil allows for immediate planting, anytime. These mounded beds make good sense in the city: toxins remain undisturbed, in the soil below. The bed has good soil structure, retaining proper moisture and draining better, too. Fewer weeds emerge and the ones that do are easier to pull. Urbanite—chunks of discarded concrete—can be used as edging, as can rocks or logs. Go to www.permaculture-exchange.org for complete instructions on sheet mulch.

Guilds are communities of plants that co-exist easily and benefit each other by performing specific functions such as nitrogen fixing, attracting insects, opening compacted soil and bringing minerals to

the surface. The plants in the guild share common sun and soil, while using different nutrients, root zones and air space. Food forests follow this guild strategy on a broad scale and consist of large and small trees, shrubs, root crops, groundcovers, herbs, vines and fungi. Growing a food forest on marginal areas and fence lines will maximize your garden.

Planting a guild pattern creates protective barriers, reduces weeds, improves the soil, and pools resources. In the beds, combine plants in groupings. For example, plant lettuce at the base of beans to block weeds and retain moisture, sweet alyssum for fragrance and marigolds to repel bean beetles. A cucumber may be added on the bean trellis since their growth habits and nutrient needs are different. Guilds are plants in their "right relationship" to each other. Plants need not be in straight rows and it is fine if they touch.

"We should not confuse order with tidiness. Tidiness separates species and creates work."

- Bill Mollison

If a plant is good for both humans and wildlife or useful for food, medicine and flowers, it's multiple uses earn it space in the design. For instance, herbs for medicinal, cosmetic and kitchen use will also attract insects that help the garden. The more we know about a plant, the more useful it will become. Even common weeds may have high nutritional or medicinal value.

Using plants that are easily shared is a good way to strengthen neighborhood connection to the garden. Herbs, edible flowers, small fruits and leafy greens are usually abundant enough to share. The benefits plant communities give each other can be a model for us, too. Consider how one plant grows under another. The bigger plant protects the tiny seedling. The seedling matures, the bigger "nurse" plant ages out and a succession garden emerges. Learning to pass through the seasons and to move from one yield to another are metaphors for the organizational structures of our gardens. There are permanent, old trees in our garden and there are annual lettuces. Healthy gardens are a dynamic community, growing and changing over time.

A GARDEN RENEWAL PROJECT: FRANKLIN MEMORIAL GARDEN

an essay by Luis Lemus, Arborist Supervisor, Prospect Park Alliance

Franklin Memorial Garden is located at 1060 Cauldwell Avenue in the Bronx. This garden is an excellent garden to visit when considering your garden's design as it contains many different features, from a butterfly garden, to an Evergreen collection, to a abundant shade garden full of a wide variety of native shrubs. Additionally, the priority put on existing materials is an example of how you can design or re-design your garden on a small budget. Luis Lemus, former Senior Community Horticulturalist with Bronx Green-Up, is currently working as an Arborist Supervisor with the Prospect Park Alliance.

A Need for Re-Design and Revitalization...

For approximately one year, I worked on the Franklin Memorial Garden. It was originally taken care of by the residents living adjacent to the garden's lot, but the garden fell into disarray due the declining health of the primary caretaker Verna Judge.

Since I was affiliated with the New York Botanical Garden at the time, acting as the New York Botanical Garden's Senior Community Horticulturist at Bronx Green-Up, I was immediately informed of the state of disrepair in the garden and decided to survey it to assess whether I would be able to utilize its existing materials and/or design scheme in order to lower costs and retain a sense of familiarity for the current gardener. Myself, working in accordance with the New York Botanical Garden and GreenThumb, labored swiftly and with rapidity to remove derelict remnants of the garden. The lot just next to it was scheduled for demolition, and we feared that if the garden were not revitalized, it would be doomed to the same unfortunate fate. The educational aspect of introducing a garden to the community as well as the inherent nature of the garden being used as a leisure and recreational space were merely two facets of the conservation effort that Verna Judge and I worked tirelessly to adhere to.

Working with What You Have...

As I looked closely at the existing materials available to me, I found an excess of blue stone that had once been used in the construction of a sidewalk as a perfect raw material for a garden patio. I had decided to split the lot up and designate each section to be a particular garden-style and incorporated a vegetable garden, a butterfly garden, a small evergreen collection (located along the vegetable garden), and a flowerbed complete with perennials, annuals, trees and shrubs. I took into account the amount of available light the garden receives, local temperature conditions, and the composition of the soil to determine which plants would be best suited for the garden's environment. The mature trees already present in the garden would, of course, remain intact. To maintain the beauty of the garden, I was well aware that a garden shed and compost bin would need to be built as well as a pergola for the vine that Mrs. Judge was growing.

GreenThumb and Bronx Green-Up lend a "Green Hand"...

Without the aid of GreenThumb and the New York Botanical Garden, however, I don't believe our efforts would have nearly been as successful. GreenThumb generously sent numerous tractors to help with the construction of our garden, materials needed for the construction of the garden shed, and the New York Botanical Garden provided all of the plant materials as well as components necessary for the completion of the patio. Overall, the garden took a year to complete with two to three visits per month by myself, Verna Judge, local carpenters through the GreenThumb organization, and the New York Botanical Garden. I would highly recommend contacting the aforementioned organizations for advice on the care and maintenance of gardens.

AN INTRO TO URBAN AGRICULTURE

Community gardeners have been growing healthy food for their communities, and creating urban oases that serve as places of learning and connection to the natural world for decades. This foundation of years of hard work and dedication to preserving green space has given rise to a renaissance of the urban agriculture movement in NYC. Now more than ever, communities are eager to start new gardens and urban farms that grow abundant, sustainably-grown crops, provide a happy home for chickens and bees, preserve rainwater and avert storm water run-off, and provide spaces for youth to learn and gain valuable work and community service experience. Urban agriculture is a vital component of building a more sustainable food system by helping NYC to build self-reliance within its communities.

Benefits of Urban Agriculture

Community gardens have long been celebrated for their wealth of social and environmental benefits, partially for their role in improving access to fresh, healthy food. Between raised beds of vegetables, fruit trees, herbs, and more, the produce coming out of community gardens supplements gardeners' cooking with seasonal gems, a taste of home, and items one can't find in a regular grocery store or bodega. Growing food in the garden may also provide for a child's first realization that food comes from the ground, perhaps inspiring healthier eating for the entire family.

On its own, the act of cultivating one's own food fosters self-sufficiency, healthier eating habits, and community empowerment. It gives more control over life's basic necessities to the communities with the least power, and has resounding benefits for people of all ages and for the city overall. There is a movement to grow more food in cities to reduce the environmental impacts of industrial agriculture on land, water, and our climate while providing equitable access to affordable, fresh food across community lines. The movement is gaining momentum, bringing the issues surrounding food back into the collective consciousness of the city and back into the school curriculum for the city's children.

The community garden is the most prevalent form of urban agriculture already taking place in New York City: once-vacant open spaces, nurtured and invested in by those who live nearby, now flourish. Because of this renewed dedication to building a healthier, equitable, and more sustainable food system, community gardens, too, are experiencing a renewed burst of interest.

Many people, especially gardeners, understand the value of growing one's own food. However, no one knows yet just how much of it we grow here in NYC! To find out, community gardeners across the city are working together to quantify the amount of food grown through a project called Farming Concrete. Partnered with GreenThumb, Just Food, and New York Restoration Project, Farming Concrete strives to create a more citizen-powered city, where urban stakeholders of all sectors can work together toward a healthier, more sustainable city. Track the city's harvest with Farming Concrete (www.harvest.farmingconcrete.org)!

FARM & GARDEN DESIGN

an essay by Deborah Grieg, Urban Agriculture Coordinator, East NY Farms!

Starting a garden or urban farm gives you a chance to be creative and strategic as you design a welcoming space that reflects and nurtures your community's assets and needs. Designing a farm or garden involves asking a lot of questions about your land that will ultimately lead you to create a productive space. This article will help you think about where to start, figure out some important features, and ultimately help you ask some of the right questions so you can design a productive, efficient, and vibrant space.

Where to Start

Starting a successful farm or garden from scratch takes time. A farmer once told me that, even though he had been, "farming for 30 years, (he had) still only done it 30 times", and still made mistakes and improvements every year. Come up with a well thought-out set of goals and a clear seasonal plan. Think about what you want out of the space: high yield vegetable production, a farmers' market site, a community hang-out, an educational space—the possibilities are thrilling and also can be overwhelming. It might be good to start small, with a clear and manageable plan for Year One that compliments your vision for expansion in future years. Each year you can add more features, more difficult crops, and more space as you gain experience and add fertility to the land.

Get to Know the Land

The first thing to do is get to know your land as well as you know yourself. Walk the land often and with an open mind, paying attention to its quirks and assets. The better your understanding of your land at the beginning of the process, the easier it will be to figure out the best place for your farm's main features, ensuring easy access and efficiency. Things to consider when you are exploring your future farm or garden are sunlight, topography, soil quality and water.

Sun — Ideally, the growing area of your farm or garden should have eleven hours of sunlight or more; seven is okay, four may work for many cool season crops. Walk the space at different times of the day and different times of the year to observe where the sun is. Southern exposure is ideal because the ground warms up the fastest, but other orientations can be very productive too.

Ask yourself: *When and where does the sun fully hit the space?*

Topography — The way your land slopes has a big impact on drainage and exposure to wind and sun. Flat or slightly sloping land with the most sun exposure that is protected from the wind is preferable.

Ask yourself: *Which way does the land slope? How will this effect sun and drainage? Is it windy or protected?*

Soil quality — Always start with the soil when you are embarking on a new growing project. This requires some advance thinking. Make sure to conduct a thorough soil test for nutrients and for heavy metals. Make a fertility plan involving additions of compost, cover crops, top soil or other organic supplements if necessary, as this will greatly improve the health of the plants. If heavy metals are found, contact your local cooperative extension to develop a plan to keep contaminants out of your growing beds and your produce.

Ask yourself: *What was here before? What are the most fertile or problem areas?*

Water access — It is important to be aware of where you are getting your water from and consider its quality and ease of application. Especially in a dry year, water can make or break your garden, and can significantly impact your time and the environment.

Ask yourself: *Where is the water coming from? Is it easily accessible? Is the pressure high or low?*

No grow zones — All of the above factors can impact what can be thought of as "No Grow Zones"; areas of your land that are not suitable for growing. They might have poor soil or be excessively shady. Consider putting farm structures like storage, compost bins or seating areas there.

Get to Know your Community

From planning to construction, garden and farm design can greatly benefit from community input and support. Involvement can range from having a design completely generated out of community ideas, getting input from experts and neighbors, or building a valuable group of skilled and enthusiastic volunteers. If you develop a sense of investment in your farm, community members will be excited to participate in events, volunteer, or to purchase produce. Your neighbors are as important as the crops you grow.

Participatory Design

Hold a meeting or conduct a survey to find out what will make people want to support your efforts. For example, you might learn that there are many Spanish speakers in the neighborhood, so it is useful to have bilingual signs; maybe there many older adults, so seating and wider pathways might be useful so that they can better visit the farm; maybe your neighbor works at night and sleeps during the day, so building a chicken coop under their window might make them upset. Take their ideas and make design that will excite the whole community.

Ask community members: *What vegetables and fruits would you eat? What features would you like to see? What would make you want to be involved?*

Ask your neighbors: *What is your schedule? Would you mind having chickens, bees, compost, etc...near your home? What would make you excited about having this garden near your home?*

Other growers have experiences under their belts that can help point you in the right directions.

Ask other growers: *What vegetables grow well? When does planting season start? What features on your farm are the most useful? What are the most important lessons you have learned?*

Important Features

When thinking about what common features you will need or want on your farm or garden, it is important to consider the best placement for accessibility and efficiency.

Bed placement & pathways — Sunlight, drainage, and accessibility can influence the way you want to orientation your growing beds. Even if you have the smallest farm, it is important to divide it into manageable sections. This way you can more easily crop plan, water, till, and ultimately effectively care for every part of your farm or garden. Beds are easiest to manage when they are standardized and simple widths to work with; 30-48" wide beds with 1-2' pathways have proven to be productive and easy to work with.

Greenhouse/hoop house — If you are interested in starting your own seedlings or extending your growing season, then a greenhouse is a great asset. You will get the best sun exposure if your greenhouse is south-facing and fully exposed. It is important to have a shady and protected area if you are hardening off transplants or doing your own seeding and potting. Too much sun can stress them.

Compost — Sustainably providing fertility for your farm or garden can be greatly supplemented with compost piles, windrows or bins. The ideal location is in the shade, partially shielded from excessive rain, which can wash away vital nutrients, away from neighbors, and with room to turn and expand operation as your farm gets more productive.

Common area — Having an open place where people can sit or gather together in a group is a good feature for encouraging a bit of relaxation and for welcoming in the community.

Irrigation — Your irrigation system is one of the most important features of your garden. There are many types out there and it takes a little bit of research and talking to other farms and gardens to figure out the most efficient and effective one for you. A few to think about are drip irrigation and/or sprinkler systems, and rainwater collection tanks.

Perennials — Perennials can be important food crops and biological assets to your farm. Fruit trees and berries should be planted in sunny areas that do not interfere with your annual crop rotation. It is extremely important to plan for these crops with care. Trees and berries grow much better if their soil has been amended, have good access to water and they are given appropriate space. If starting from scratch, make them a part of your plan in Year Two or Year Three, but start improving the soil in Year One. Perennial flowers and other shrubs are a beautiful asset to any farm or garden, but also offer many imperative benefits like wind protection and attracting beneficial insects and pollinators.

Tool storage — It is important to have secure and easy access to your tools. This is often best placed in one of those "no grow zones".

Harvest station — If you are production-oriented, it is important to have a shady, cool and clean area that has accessibility to water to set up your harvest station.

Refrigeration — A major plus if you are considering a production oriented operation.

When starting a farm or garden, organization, community participation, expert advice and keen observation are your best assets. Creating a farm or garden design is an incredible learning opportunity that can have a significant impact on your community. It's a lot of work, and a lot of fun!

Sources:

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Jeavons, John. *How to Grow More Vegetables*. Berkeley, CA Ten Speed Press, 2002

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HOW TO RUN A COMMUNITY MARKET

an essay by Karen Washington, La Familia Verde Farmers Market, and Nadia Johnson, Just Food

Looking to start a community-run farmers market in your neighborhood? These markets are great because they help bring fresh, affordable, local food to neighborhoods that need it and inspire better health and well-being. They're run by the community and for the community, and promote community pride, unity and empowerment. So let's get started!

Here's a helpful to-do list to get you on your way:

1. Ask yourself "why do I want to start this market?" Do a survey with community folks. From this you can find out what the needs for the market really are and gauge the interest of your community for a farmers market. Remember, it's not your project, it's a community project.
2. Find people interested in working the market. Successful markets often involve people who demonstrate dedication and commitment, willingly donate their time, energy and enthusiasm to the market, and seek to better their communities. You'll need a market manager and volunteers. Mobilize fellow gardeners if it's a community garden-based market. Seniors are excellent as many have grown up with farming backgrounds, have great skills and experience and are often very reliable and dependable. Your market must be open no matter what the weather, so make sure you have a dedicated group to work the market.
3. Determine a day, time, location and season that meets the needs of the farmers, gardeners, consumers, and the local community. Make sure you pick a day of the week you know you and members can work it throughout the length of your season. You want your market to be in an area with a lot of foot traffic, and that is readily accessible to the community. So remember, "location, location, location!"
4. Contact the NY State Department of Agriculture & Markets or Just Food to connect you with farmers. (See page 83 in the Additional Resources section in this book for contact information).
5. Make sure you get a proper permit. Which permit is needed will depend where the market is located. If it's on Parks property, you can get a Parks Department permit. A private sidewalk or property requires permission from the owner. A publicly owned sidewalk might require a permit from the Mayor's Street Activities Permit Office. Also, help the farmers support the market by getting parking permits for their trucks next to the market location.
6. Get market and vendor insurance, as it'll protect you, the market and any property or organizations affiliated with the market.
7. Enroll in programs such as Farmers Market Nutrition Program for WIC and seniors, EBT/food stamp terminals, and Health Bucks coupons, especially if you're market is located in a low-income neighborhood.
8. Have some startup money and seek kind donations. No matter how big or small your market is, some start up money will be needed: to pay permit and insurance fees, make signs and flyers, secure needed equipment such as tents, tables, boxes, scales, cash boxes, and more. Go to local banks and businesses to seek donations for the market, or talk with your local City Council Member about providing discretionary funds for the market. Maybe a neighborhood restaurant

could donate a table and some chairs, or a local organization could provide storage for your market equipment. Don't be afraid to ask!

- 9.** Ally yourself with local organizations. Often local groups can act as your market's fiscal sponsor or support your work in other ways. It's likely your market can support their work and mission as well!
- 10.** Is your community garden interested in starting a farmers market? Just Food's City Farms Market Network is a community of independently-run farmers markets committed to growing food in NYC, serving their local communities and supporting gardeners, city farmers and regional growers. To find out more or to request an application for our farmers market training, contact Nadia at (212) 645-9880x237 or nadia@justfood.org.

YOUTH & SCHOOL GARDENING

Whether you're working with youth in a community garden or a school garden, here are some tips to get you started. For further information on the Citywide School Gardens Initiative, please visit <http://growtolearn.org/>. Additionally, GreenThumb has the *School Garden Resource Guide*, available at the GreenThumb office or pdf download on our website.

Top 5 Things to Do When Starting a School Garden

- 1. Visit a local garden.** A great way to get students interested in gardening—and to think about creating an outdoor learning space—is to visit a local school or community garden. It gives students a sense of how wonderful and practical gardening is while jump-starting ideas for gardening or outdoor projects they would like to put in place.
- 2. Form a garden team/committee.** In order to establish a sustainable greening effort at your school you need allies to help you along the way. They can be anyone in the school who is motivated and dedicated and understands the value of school gardening. However, there are a few very essential people: the custodial engineer, the principal, a teacher, a committee of interested parents and community volunteers. Garden or no garden, the custodial engineers are responsible for the school grounds and it is best to bring them in at the beginning. The principal must approve of a school garden and give permission for various garden-related developments. Principals can make things easy or extremely difficult and having their input increases the chances for a successful garden plan and implementation. Finally, if you are a teacher yourself, it is essential to bring in at least one fellow teacher; if you are a parent or ally of the school you should do the same. With a garden team in place you will be able to share the work that is involved in getting the garden established and also increase the garden's popularity within the school.
- 3. Choose your space and draw a map.** If you plan to garden outside, where is the best sunlight? Is there water access? Can students easily access the space? Consider these and similar questions when selecting a garden site. Make sure your students are part of the decision making, because students begin to learn that gardening is not just about sowing seeds and digging for earth worms. Once your site is selected you should put together a to-scale map, including permanent features (trees, in ground benches, fences, etc.). This will help your group in think about how the space and proposed garden best mesh.
- 4. Test your soil.** If you plan to grow any food in soil from the site, you should test it. Brooklyn College (<http://www.brooklyn.cuny.edu/pub/departments/esac/1535.htm>), Cornell University (<http://cnal.cals.cornell.edu/>), and the University of Mass. at Amherst (<http://www.umass.edu/soil-test/>) have lab testing services that vary a great deal in both cost and the magnitude of the test but they all test for heavy metals (e.g. lead, chromium, cadmium, nickel, arsenic) which is your primary concern. If you bring in soil from a vendor that does their own testing it will be a good idea to obtain a copy of their soil analysis results which they are required to do regularly. They will also test for nutrient levels upon request, which is important if you want to grow a healthy garden.
- 5. Start composting.** Composting is the recycling of nutrients from decaying material in the soil, makes them readily available to plants and other organisms in the garden ecosystem. Compost is essential to any successful garden plan because it provides a free, organic and sustainable source of food for your plants. You can set up a compost system outdoors or indoors, and composting systems are quite varied and adaptive depending upon your set up and ability to commit to it. When used properly, compost allows you to water and weed less often and keep your plants vital and prolific. It is also a great teaching tool for a variety of subjects ranging from economics to chemistry.

Top 5 Things That will Take Your School Garden to the Next Level

- 1. Summer care.** In order to make it through the school vacation season you could offer parents and volunteers designated areas to steward in exchange for summer volunteer hours. If your school has a group of parents or allies that love to garden they will likely be more than willing to help out and in return you can allow them to harvest produce. As a last resort, see if the custodial engineer is willing to provide assistance with watering and weeding and make it clear that you have a group of willing volunteers to help lighten the load. If you know that you cannot take care of the garden through the summer, you should plant spring and fall but not summer harvest crops. In addition, it is a good idea to start the garden as early as possible in the spring and try to extend into the colder months so that the garden has a significant harvest within the school calendar.
- 2. Curriculum.** The garden provides an opportunity to take on a number of subjects with fun, interactive, hands-on lessons that students can experience first-hand. There is a huge amount of curricula out there, and a lot of it is free online or through local greening organizations. The *GreenThumb School Garden Resource Guide* is a great place to start. It is best to match up the curricula with standards that must be met based upon the New York City Department of Education standards which can be found online (<http://schools.nyc.gov/Academics/default.htm>). You should also work the garden in ways that fit well with your curriculum objectives and a great way to do this is to meet and discuss how you want to do this with the garden team during the winter months when you have time to plan.
- 3. Greening partners.** Identify the talent in the community, garden clubs, Master Gardeners, environmental groups, 4-H, parents and friends with gifts for carpentry or other services. By reaching beyond the walls of the school you will provide opportunities for relationship building with people who may have never been involved with the school before. In every community across the city there is a wealth of technical expertise just waiting to be tapped. It is up to you to reach out and shake hands with your neighbors and let them know about your garden's needs so you can explore potential programs and partnerships. This process is of vital importance in creating a sustainable garden with a lasting role in the community that goes beyond a few teachers or parents.
- 4. Use a maintenance schedule.** You should create a schedule of days and times that the garden will be used or maintained. This will help you avoid any double-bookings and provide you with a way of tracking the number of hours spent in the garden each season. A schedule is also useful information for the principal or anyone interested in quantifying the impact the garden is having.
- 5. Create measures for success.** By tracking your hours you will already be on your way to having an evidence base that can be used to show how the garden is progressing. You should also put together a general school survey for students, teachers and faculty to illustrate the qualitative impact the garden is having. A questionnaire for students before they are introduced to the garden and then after they have spent a full season is also a great way to measure the garden's educational value. There might be tests that students take that show an improvement and if the lessons related to those tests were done in the garden this should be recorded somewhere for future use.

PROBLEM SOLVING 101

Below are just a few of the more common problems that occur in community gardens, with suggestions for resolving them.

Problem: There's a car, truck, or other motorized vehicle in the garden.

Cars, trucks, or other motorized vehicles may not be parked or stored in a community garden at any time. Ask the vehicle's owner to remove the vehicle immediately. If the vehicle appears to be abandoned, call GreenThumb to make appropriate arrangements.

Problem: Someone is using or selling illegal drugs in the garden.

If you see someone selling or using drugs in or near your garden, call the New York Police Department (dial 911 in an emergency, 311 in a non-emergency) or call your local precinct. They'll take it from there. Don't place yourself in a dangerous position.

Problem: Someone is drinking alcohol in the garden.

Inform the individual that public drinking is prohibited in gardens by New York State law. Placing "Garden Rules" in a visible place may help to deter the problem. If the offending individual is a garden member, consult your group's bylaws as to the proper course of action. If a garden member repeatedly breaks garden rules, it is appropriate to expel that member.

Problem: Someone is storing personal items in the garden.

Personal items (items not used to maintain the garden) may not be stored in a GreenThumb garden. If someone is storing personal items in the garden, ask that person to remove them. If the items appear to be abandoned, place them in a black plastic garbage bag and throw them away. If the items are large, call the Department of Sanitation (dial 311 and ask for the Department of Sanitation) or call GreenThumb to arrange for a pickup.

Problem: Garden members are not allowing public access to the garden.

GreenThumb gardens are intended for community use. If your garden group is not allowing public access to the garden (in the form of 20 open hours per week from April 1st through October 31st), you risk losing your garden privileges and termination of the garden license. If you are unable to create a waterproof "Open Hours" sign, you can call GreenThumb and we will create a laminated sign for you. You are responsible for ensuring that the garden is open when you say it will be open!

Problem: Garden members are not allowing new members to join the garden.

If there are no beds available in your garden, you may place interested individuals on a waiting list. As garden beds become available, you can then offer them to individuals on the waiting list.

Problem: The people in your community are not attending your garden's events.

A successful event usually involves thoughtful planning, creative advertising, and (to be honest) delicious food. Posters, flyers, and newsletters are all good ways to let people in your community know what's going on.

Remember that New York City is filled with people from many different backgrounds. It is part of a community garden's responsibility to make everyone in that community feel welcome—regardless of age, race, gender, ability, ethnicity, or sexual orientation.

Problem: Your GreenThumb sign is missing or has been damaged.

Contact GreenThumb and we will arrange for a new one to be posted.

Problem: Your routed Parks sign is missing or has been damaged.

Contact GreenThumb. We have to request one from the Parks sign shop. Please note: Only GT gardens under DPR jurisdiction are eligible to receive a routed Parks sign.

GREENING PARTNERS

Added Value

www.added-value.org/index.php; (718) 855-5531

A nonprofit organization promoting the sustainable development of Red Hook by nurturing a new generation of young leaders. They work towards this goal by creating opportunities for the youth of South Brooklyn to expand their knowledge base, develop new skills, and positively engage with their community through the operation of a socially responsible urban farming enterprise.

American Community Garden Association

www.communitygarden.org or info@communitygarden.org

This national network's site has info about starting a community garden, resources, and more. Their listserv allows you to contact community gardeners all over the country.

Botanique

www.botanique.com

National listing of gardens, arboreturns, and various other nature sites. Links to botanical organizations, gardening publications, and other resources for gardeners.

Brooklyn Botanic Garden

www.bbg.org; (718) 623-7200

Provides horticulture tips, tours, resources, and workshops.

Bronx Green-Up

www.nybg.org/green_up; (718) 817-8026

The community outreach program of The New York Botanical Garden, provides horticultural advice, technical assistance, and training to community gardeners, school groups, and other organizations interested in improving urban neighborhoods in the Bronx through greening projects

Citizens Committee for New York City

www.citizensnyc.org; (212) 989-0909

Technical assistance and training sessions available to help make your community group work better. Cash awards up to \$350 for local beautification projects provided through Mollie Parnis "Dress Up Your Neighborhood" contest. Also provides grants through Neighborhood Environmental Action Program and Building Block Awards.

Earth Celebrations

www.earthcelebrations.com; (212) 777-7969

An artists' collective from the Lower East Side working to support and preserve gardens through art and community action. Includes nice section highlighting Lower East Side gardens.

East Village Parks Conservancy

<http://evpcnyc.org/index2.html>; (212) 353-9063

The East Village Parks Conservancy is a not-for-profit, community-based organization of volunteers who are committed to the care, restoration and expansion of East Village public parkland.

Farm School

<http://www.justfood.org/farmschoolnyc>; (212) 645-9880 ext.224

Farm School NYC will offer comprehensive training in all aspects of urban agriculture through a two-year certificate program and a wide range of individual courses.

Farming Concrete

<http://farmingconcrete.com/> or gardens@farmingconcrete.com

A project to measure how much food is grown in New York City's community gardens and community-oriented urban farms and to assign the total volume a monetary value.

Flatbush Gardener

<http://flatbushgardener.blogspot.com/>

Adventures in Neo-Victorian, Wild, Shade, Organic and Native Plant Gardening, Garden Design, and Garden Restoration.

Garden Maps

<http://gardenmaps.org/>

Created to provide New York residents and community developers with more information about the activities and features of each community garden, this GardenMaps charts out the results of a 2009-2010 survey by Mara Gittleman and Lenny Librizzi to support the work of GrowNYC and GreenThumb. Also, you can create your own garden map there.

Green Bytes

<http://hsny.blogspot.com/> or gpisegna@hsny.org

The Journal of The Horticultural Society of New York.

Green Guerillas

www.greenguerillas.org; (212) 594-2155

Green Guerillas uses a unique mix of education, organizing, and advocacy to help people cultivate community gardens, sustain grassroots groups and coalitions, engage youth, paint colorful murals, and address issues critical to the future of their gardens.

Greenbelt Native Plant Nursery

www.nycgovparks.org/sub_about/parks_divisions/gnpc/index.html; (718) 370-9044

Division of the Department of Parks & Recreation, they provide locally appropriate seed and plants, offer guidance in planning projects, and invite you to explore their services and resources.

GrowNYC

www.grownyc.org; (212) 788-7900

This organization reaches out to the public with environmental education, waste prevention and recycling, Open Space Greening, Greenmarket, rainwater harvesting and other programs.

Grow to Learn NYC

<http://growtolearn.org>

The Citywide School Gardens Initiative is a public-private partnership between the Mayor's Fund, GrowNYC, and several government agency partners, including GreenThumb. Contact for information on registering a school garden.

Ioby

<http://ioby.org>; (917) 464-4515

Connects donors and volunteers to environmental projects in their neighborhoods to inspire new environmental knowledge and action in New York City.

Just Food

<http://www.justfood.org>; (212) 645-9880

Fosters urban agriculture and works towards " building a Just and Sustainable Food System for NYC!" Programs include city chickens and bees, Community Supported Agriculture and City Farms.

La Familia Verde

www.lafamiliaverde.org; (212) 645-9880

La Familia Verde is a coalition of community gardens in the Crotona, East Tremont, and West Farms neighborhoods in the Bronx. Formed in 1998, its mission is to sustain the environment and culture of our neighborhood through education, community service, and horticulture.

NYC Beekeeping

<http://www.nycbeekeeping.com/>

NYC Beekeeping is an association of over 900 beekeepers and bee .lovers that offers free classes in beekeeping with Gotham City Honey Co-op, expert and peer mentoring, a cooperative purchase program, and community service and outreach activities throughout the year.

New York Botanical Garden

www.nybg.org; (718) 817-8700

Education, events, workshops, and more.

New York Restoration Project

<http://www.nyrp.org>; (212) 333-2552

Good land trust resource. See their timely, informative newsletter.

The NYC Compost Project

http://www.nyc.gov/html/nycwasteless/html/compost/composting_nyc.shtml

The NYC Department of Sanitation's site has info about compost givebacks and compost deliveries. Also, an overall good composting resource.

NYC Department of Environmental Protection

www.nyc.gov/html/dep; (718) 595-3506

Provides a range of educational programs and materials on environmental issues, especially water supply, waste water treatment and water conservation. Teacher workshops, printed materials, and guided field trips to water supply and waste water treatment plants are also available.

NYC Department of Parks & Recreation

www.nycgovparks.org/

The official website of the Parks Department. Apply for permits online, find out about events, get the latest news, see interactive maps, read histories of your local park, and more.

NYC Department of Sanitation

www.nyc.gov/dsny; Fax: (212) 788-3915

Contact for if ongoing curbside pickup is needed. Requests must be sent in writing.

NYC Department of Sanitation; 125 Worth Street, Room 700; New York, NY 10013; Attention: New Service.

NYC Environmental Justice Alliance

www.nyceja.org; (212) 239-8882

Citywide network that links grassroots organizations, low-income neighborhoods, and communities of color in the struggle against environmental racism.

NYCLeaves

<http://nycleaves.org> or compost@nycleaves.org

NYCLeaves is a volunteer-run, neighborhood-based coalition of community gardens, botanical gardens, greening groups, environmental organizations, City agencies and community partners dedicated to reducing the amount of useable organic material that currently ends up in our wastestream.

NY State Department of Agriculture & Markets

www.agmkt.state.ny.us; (800) 554-4501

Good resource for starting a farmers market.

Partnerships for Parks

www.itsmypark.org; (212) 360-1310

Encourages community support and involvement in New York City's Parks. Helps to strengthen, support, and start neighborhood park groups.

Safe Horizon Mediation

www.safehorizon.org or mediation@safehorizon.org; Manhattan (212) 577-1740, or Brooklyn (718) 834-6671

Offers free mediation services for conflict resolution.

Trees New York

www.treesny.org; (212) 227-1887

Trees New York (TNY) is an environmental and urban forestry nonprofit organization. Our mission is to plant, preserve and protect New York City's neighborhood trees through education, active citizen participation and advocacy.

Treebranch Network

<http://treebranch.org>; (212) 228-3126

Neighborhood Open Space Coalition's Hub for the NYC Urban Environment.

Trust For Public Land

www.tpl.org; (212) 677-7171

This national organization works to protect open spaces via land trusts. Some GreenThumb gardens are under their jurisdiction, so see what they're all about.

Water Resources Group

waterresourcesgroup.blogspot.com

The Water Resources Group is a coalition of NYC greening and community garden groups that installs rainwater harvesting systems in gardens across the city to conserve water and prevent pollution.

VENDORS

Collected Seed

www.collectedseed.com; (518) 722-8239

Collected Seed Farm was established in response to the need for secure and affordable access to fresh, sustainably-grown food in the Mid-Hudson Valley/Catskill region.

Fedco Seeds

www.fedcoseeds.com; (207) 873-7333

Gardens Alive!

www.gardensalive.com; (513) 354-1482

Online catalog for ordering natural pest controls, garden supplies, and more.

Gardener's Supply Company

www.gardeners.com; (888)-833-1412

Mail order and online store that sells everything from seedstarting supplies and garden furniture to flower supports and garden carts.

High Mowing Organic Seeds

www.highmowingseeds.com

Independently owned and specializes in organic seeds.

Hudson Valley Seed Library

www.seedlibrary.org

Accessible and affordable source of regionally-adapted seeds that is maintained by a community of caring farmers and gardeners.

Johnny's Seeds

www.johnnyseeds.com; (877) 564-6697

A privately held, employee-owned seed producer and merchant headquartered in Winslow, Maine.

Organic Gardening

www.organicgardening.com

The online version of the magazine-everything you need to know about growing a great garden!

Seeds of Change

www.seedsofchange.com; (888) 762-7333

Quality, non-genetically modified seeds.

Seed Savers Exchange

www.seedsavers.org; (563) 382-5990

A non-profit, 501(c)(3), member supported organization that saves and shares the heirloom seeds of our garden heritage, forming a living legacy that can be passed down through generations.

Victory Seeds

www.victoryseeds.com; (503) 829-3126

Heirloom seed resource. Check out these flavorful, tried-and-true varieties.

NYC COMMUNITY GARDEN ROOTS: A BRIEF HISTORY

by Lenny Librizzi, Assistant Director of Open Space Greening at GrowNYC

We can trace the recent history of community gardens in New York City to the early 1970's. At this time there were more than 10,000 city owned vacant lots in the city, mostly in neighborhoods where buildings were abandoned by landlords and tenants and many were burned and demolished. Neighborhood residents worked together to turn these lots into places to beautify the neighborhood, grow food and keep eyes and ears "on the street" as a way to combat crime and drugs. The first Garden advocacy group the Green Guerrillas started in 1973 and the Council on the Environment encouraged the city to start a municipal gardening program, Operation GreenThumb (OGT). OGT was established in 1978 initially as part of the Department of General Services, the city agency which managed city property. Using Federal Block grants OGT provided materials and services to community groups that received interim leases for city owned vacant lots.

Community Garden Advocacy groups negotiated with the city to offer longer term protection for gardens. Initially 5 year leases were issued to a small number of gardens with appraised value of less than \$20,000. These leases were renewable and extended to 10 years. Except for a few instances where other preservation mechanisms were used, outright purchase of the land by the garden group and incorporation as a land trust of El Sol Brillante in Manhattan and the 1100 Block Bergen Street Garden in Brooklyn and the symbolic square inch sale of the garden land at the Clinton Community Garden in Manhattan which convinced the city to make that site into city parkland, long term leasing was the preservation method used. Most gardens with strong groups continued to survive even without the long term protection. The first notable garden that was destroyed for subsidized housing was Adam Purples Garden of Eden in 1986.

A very small percentage of gardens had any type of long term protection throughout the 1980's and 1990's. In 2 national surveys of community gardens published in 1992 and 1998 by the American Community Gardening Association, the numbers of community gardens in NYC were listed as 845 and 869 respectively; very few had any type of permanency. The gardens were still considered a temporary use. Many lots were leased by groups and not turned into gardens so during that 6 year period almost as many gardens were lost as were started.

As the city emerged from the fiscal crisis and housing development began in earnest in the mid 1990's, the gardens were sought after as development sites. The city moved the GreenThumb program from the Department of General Services to the Parks Department, the long term leases were no longer offered and license agreements replaced the interim leases. Several gardens were transferred to Parks jurisdiction but were not mapped as Parkland. Some garden licenses were cancelled and the land developed as low income housing.

The highest profile garden to be developed into housing was the D.O.M.E. Garden on the Upper West Side. Despite protests, press coverage and court hearings the garden was destroyed but was the catalyst that increased the notoriety and advocacy in support of gardens. Greening non-profit groups began meeting to collaborate on garden preservation strategies. Community gardeners formed Garden Coalitions beginning with the Lower East Side Garden Coalition and the New York City Coalition for the Preservation of Gardens to create a united front to fight against the loss of any additional gardens.

A great deal of activity for and against community gardens took place between 1997 and 2000. The city canceled licenses for a number of gardens, then canceled all licenses and began making plans to build on garden sites and to bulldoze gardens in preparation for transfer of the sites to develop-

ers. One notable case was the bulldozing of the PS76 Garden of Love in Harlem as the children from the elementary school who planted the garden looked on. Mayor Giuliani made his famous "...welcome to the era after communism" comment in response to protests about the City's plan to auction over 100 community gardens to the highest bidder regardless of how the land would be used.

Activists took part in rallies and disruptive protests and many were arrested. The Standing Our Ground Conference and Rally attracted politicians and gardeners from across the country which broadened the support for preserving the gardens. A large amount of money was raised in order to purchase the gardens. GrowNYC's (formerly Council on the Environment) Community Garden Mapping Project made maps and other information available on the OASIS website for supporters to use to preserve gardens. The community gardeners and non profit greening organizations filed lawsuits to stop the destruction of the gardens. In an 11th hour move, then Attorney General Eliot Spitzer files a lawsuit on behalf of the gardens on the day before the auction and an injunction stops the auction. The following day the City reached an agreement with the Trust for Public Land and the New York Restoration Project to purchase 114 gardens for 4.2 million dollars.

This purchase stopped the loss of a large number of gardens but the City continued to convey community gardens to developers for low and market rate housing. Thirty two gardens were transferred to the Parks Department for preservation but still not mapped as Parkland. In February 2000 Attorney General Spitzer was granted a Temporary Restraining Order which prevented any development on any community garden and halted any further attempts by the Giuliani administration to destroy community gardens.

The Temporary Restraining Order remained in effect until September 2002 when Mayor Bloomberg and Attorney General Spitzer reached an agreement (The Agreement) that preserved nearly 400 community gardens on city owned land while allowing development to move forward on over 100 gardens that were already included in proposed development plans. Before development could take place in these gardens "subject to development", a garden review process was required and the community gardeners were offered a site to relocate the garden.

The Agreement continued to protect community gardens until September 2010 when new garden rules were announced with wording similar wording and protections as in The Agreement. Under the garden rules new gardens will be allowed and will receive the same protections as existing ones. Discussions are ongoing to make sure that the gardens have the best long term preservation protection possible.

While very few new gardens have started since 1999, much effort has been made since then to ensure the long term viability of community gardens by promoting sustainable gardening practices like composting and rainwater harvesting. Community gardeners and non profit greening organizations have also worked towards achieving social sustainability by strengthening the community garden groups. Community gardens have become part of the vocabulary of the city and vital to their neighborhoods. The community gardeners continue to create a history of working together to make a positive impact on the city's environment.

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JUST FOOD RESOURCES AND ORDER FORM

For more tip sheets form Just Food, use the order form on the next page or visit www.justfood.org



CSA in NYC Toolkit

\$40

This guide will assist you in starting a Community Supported Agriculture (CSA) project in NYC. Since 1996, Just Food has helped start and provided assistance to over 40 CSA groups. This easy-to-follow book gathers Just Food's experiences and lessons learned. The Toolkit features a chronological series of Tip sheets corresponding with Just Food's CSA in NYC Start-up Workshop Series. It outlines important steps of running a CSA, including recruiting members, making CSA accessible to people of all income levels, applying to accept Food Stamps, and conducting a cooking demonstration. It also provides lots of sample materials and a resource list for learning more.

The City Farms Market Guide

\$40

The City Farms Market Guide provides information and insights to help NYC urban gardeners start, run, and grow for community-based farmers' markets in their neighborhoods. The guide offers a variety of helpful recommendations and resources ranging from logistical considerations and tips for growing for market, to important information regarding state and local market regulations.

The City Farms Toolkit

\$40

Information was gathered from various sources throughout New York City, State and beyond to create this comprehensive guide to urban agriculture in NYC. The City Farms Toolkit is comprised of over 70 tip sheets touching on everything from planting calendars to soil care to season extension. This toolkit also contains a resources directory linking community gardeners to over 100 relevant agencies and organizations. Although this toolkit was developed specifically for city farmers in New York, most elements are useful to hobby gardeners, urban farmers and organic growers everywhere.

Veggie Tip sheets Book

\$40

With the joy of being a community gardener or a CSA member comes the assortment of our region's fresh fruits and vegetables. Sometimes we have more produce than we know what to do with or we find a new and unfamiliar vegetable in our CSA share. Just Food's Veggie Tip sheets will give you new creative ways to prepare the season's bounty with a variety of recipes, storage tips and nutritional information. Enjoy!

The City Chicken: A Guide to Raising Hens for Eggs in NYC

\$18

New Yorkers have always raised chickens and there are many NYC community gardeners that have years of hands-on experience and skills. This guide was written to support, enhance and promote urban chicken projects in New York City. Designed as a resource for both new and experienced chicken keepers, The City Chicken provides information on laws and regulations, raising healthy chickens, egg production, coop design and more.

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