



**A Community Garden
Start-Up Guide**
For Residents of Napa Valley

by The Offshoots
Leadership Napa Valley Class XXIII
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Nick Cann

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Acknowledgements

Many people collaborated to make this guide a reality. We would like to thank the following organizations and individuals for their generous contributions of time, guidance and resources to the completion of this project:

Artist Nick Cann for the wonderfully apt illustrations; Yvonne Rasmussen of The University of California Cooperative Extension Office for offering guidance and local resources and support; Elizabeth Wroblicka and; Tim Dewey-Mattia (Napa Recycling & Waste Services); peer reviewers Teri Buchanan, Michael Christopher, Tim Dewey-Mattia, Susann Ortega and Susan McWilliams (St. Helena Community Garden), and Dave Whitmer (Napa County Agriculture Commissioner).

Preface

While there is no shortage of information on the subject of community gardens online, this guide is intended as a primer for residents of the Napa Valley. It summarizes best practices for starting a community garden and keeping it growing – from finding a location to ensuring a successful harvest – and contains tips and resources specific to this place we call home.

This handbook was conceived and created by “The Offshoots”, a small group of community-minded citizens consisting of Marielle Coeytaux, David Crum, Marie Dolcini, Deb Oberlin, Anne Steinhauer, and Toni Renee Vierra. Organized as a practicum project under the auspices of Leadership Napa Valley, The Offshoots published this document in the spirit of making a positive contribution to the greater Napa Valley community and of achieving bigger and better things in concert with others. May it seed a thousand shoots!

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Introduction: *What Is a Community Garden?*

At its simplest, a community garden is a piece of land gardened by a group of people. It can be an urban, suburban or rural. Flowers as well as fruits and vegetables can be grown. It can consist of one community plot or many individual plots. People start community gardens for a variety of reasons, including growing nutritious food for themselves, their families and friends, saving money, making new friends and strengthening communities and neighborhoods. But they also:

- Encourage self-reliance
- Create recreational and educational opportunities
- Reduce crime
- Beautify neighborhoods
- Conserve resources and green space
- Improve the quality of life for people in the garden
- Provide a catalyst for neighborhood and community development
- Create income opportunities and economic development
- Reduce city heat from streets and parking lots

Here in the Napa Valley, community gardens have been created by church groups, housing and neighborhood associations, 4-H groups and ad hoc groups of citizens. A great number of school gardens have also taken root under the auspices of the Napa Unified School District and other Napa County School districts. They can also be started by hospitals, senior communities, care facilities, juvenile hall, cultural associations and chefs, among others.



1. GETTING ORGANIZED

Whether you're working with friends, neighbors, or a local organization, there are many things to consider before you break ground. This section is intended to help you address some basic issues when organizing a group of people to get a gardening project off the ground, and is not intended to include every consideration that might arise. In fact, each topic area will most likely trigger additional questions. Refer to our ADDITIONAL RESOURCES and APPENDICES sections often, select those tools that apply most to your situation and modify as necessary.

DISCLAIMER #1 – *Regulations regarding community gardens vary by jurisdiction. We strongly recommend that you contact your local planning department to familiarize yourself with all applicable policies and regulations that may impact your plans.*

Form a Club or Committee and Give Yourself a Name

Initially, your group of interested participants may be organized very informally and operate successfully. Ideally, leaders will emerge to propose ideas and carry out tasks as they arise. However you choose to structure your organization, build it to accommodate new roles/responsibilities as the workload expands.

Keep in mind that your organizational structure should be easy to understand and shouldn't intimidate newcomers. It is, ultimately, simply a tool to aid in your success. A clear organizational structure can help encourage each person to participate fully, and enable the group to avoid common pitfalls and perform more effectively. Regardless of the structure you choose, it's vital that the designated leadership be responsive to members. So, have a written list of key organizers and their contact information available at all times. Having a clear structure will help your organization last – and thrive – by promoting trust, helping your group grow and creating new opportunities for leaders to develop.

Some questions to ask when defining organizational structure include:

- How will decisions be made?
- Who chooses leaders and how?
- How will you raise money? (Membership dues, fund raising, grants, sponsors?)
- Are you open to change? (Flexibility is important when goals and members change.)
- Do you want to be incorporated or act as a club? (Note: If you think incorporating is the way to go, be sure to get adequate legal advice.)

Identify Your Goals

Generally speaking, a community garden project should be kept as simple as possible, whether large or small. Plan to discuss and identify your group's purpose and short and long-term goals at your initial meetings. For example:

- Are you primarily interested in growing organic vegetables for your family?
- Are you motivated instead to raise money for charity by selling your bounty at a local farmers' market or to feed the homeless?
- Are you looking to establish a garden at a local school to get children directly involved in growing and preparing more nutritious food?

Define Roles & Responsibilities

Some questions to ask when defining individual roles and responsibilities include:

- Who does what?
- How will work be shared?
- How will we accomplish tasks no one in the group can do?

Some of the key roles and responsibilities include President or Steward, Garden Coordinator, and Treasurer. The Steward may act as a community liaison and spokesperson. Your Coordinator may be responsible for assigning plots, ensuring adequate materials and organizing seasonal work plans. A Section Manager may coordinate care and gardener relations for specific sections of the garden. Your Treasurer may take responsibility for all financials regarding the garden and work to secure necessary funds by completing grant applications and soliciting both cash and in-kind contributions. You may also consider including other positions, such as an Activities Coordinator to plan educational and outreach events; a Grounds Person to specifically monitor and coordinate ongoing maintenance; and an Irrigation point person to manage questions and issues as they arise.

Identifying a point person for each of these roles will help you organize and keep the garden going strong. Spreading the work load also helps prevent any one volunteer from getting overburdened and ensures a smooth transition as new leaders step up to take more active roles and existing leaders step down. Included below are nine general areas to consider when assigning specific job responsibilities. There are many ways to describe garden jobs and these will help give you some good ideas:

Categories

- Coordination/Management
- Garden Maintenance
- Equipment Maintenance & Repair
- Events
- Membership & Plots
- Outreach & Community
- Irrigation
- Pest Control
- Supplies

Establish Bylaws

After discussing your program and exploring opportunities and suggestions raised at your initial meetings, you'll be in a better position to develop bylaws or organizational guidelines. As a rule, the simpler, the better.

Bylaws are rules that govern the internal affairs of an organization. They are required when you form a nonprofit corporation and must be filed with the State in which the nonprofit resides, but are useful even if your group is a club or a group of neighbors and official filing isn't necessary. Guidelines and rules are less formal than bylaws. Bylaws are often adequate for a garden group that does not intend to incorporate. Before you start developing your format, you might want to look at the documents created by similar organizations.

DISCLAIMER #2 - Should your group wish to become a legal entity, seek out an attorney who can advise you on the proper approach and structure. (Given the noble intent of your quest, you might be able to obtain pro bono legal assistance.)

What do formal bylaws include?

- The complete name of the organization and legal address.
- The names and addresses of all organizing members.
- A brief description of the purpose, goals and philosophy of the organization.
- Membership categories and eligibility requirements.
- Membership dues (amount and renewal cycle).
- A description of when regular or special membership meetings are to be held, as well as regular and annual meetings of the board of directors.
- A description of which officers are necessary, how they are chosen, their length of term and duties and how vacancies are filled.
- Identification of any special committees, their purposes and how they operate.
- The organizational dissolution processes.

Other things to consider:

- Establish a system for rescinding or amending the bylaws – perhaps by a simple majority. State any official policies or practices: e.g...
“(name) garden group will avoid the use of hazardous substances; will agree to keep all adjacent sidewalks in good repair and free of dirt; will make all repairs necessary to keep equipment, fences and structures in good order and repair.”
- A “Hold Harmless” clause (sample):
"We the undersigned members of (name) garden group hereby agree to hold harmless (name owner) from and against any damage, loss, liability, claim, demand, suit, cost and expense directly or indirectly resulting from, arising out of or in connection with the use of the (name) garden by the garden group, its successors, assigns, employees, agents and invites."

For more information about whether to incorporate as a non-profit organization (a state function) or to get tax deductible charitable (501(c)3) status (a federal IRS function), go to:

www.tgci.com/magazine/96summer/tobe1.asp

www.nolo.com/article.cfm

Again, if you intend to incorporate, it's best to review all document and filing requirements with an attorney.

Get the Word Out

After establishing some kind of committee and organizational structure, you can start getting the word out to increase awareness of your garden project and recruit potential participants. Create a public relations and outreach plan that includes publicizing your project in the immediate neighborhood, approaching local media *and* having some fun.

Some suggestions for spreading the word include:

- Create an informational flyer in English and Spanish and distribute door-to-door in the neighborhood; post in local businesses and on community bulletin boards (including those online); distribute to neighborhood association.
- Make and post a colorful sign that is visible from the public right-of-way and includes contact information (or see if you can get one donated by a local sign company);
- Launch a website;
- Create a press release and distribute to local media outlets (i.e. *The Napa Valley Register*, *St. Helena Star*, *Weekly Calistogan*, *The American Canyon Eagle*, *The Bohemian*, KVYN/KVON, Channel 28, etc.) ;
- Inform your local municipal government and ask the communications director to post your “Call for Gardeners” on the City’s news and community sections of the website;
- Approach local radio and cable TV program hosts and pitch your project as the focus of an upcoming show. (KVYN/KVON, Channel 28);
- Request that local gardening groups put your “Call for Gardeners” or a link to your website on their websites (UC Cooperative Extension Master Gardeners, California Native Plant Society, Napa Community Garden Association, etc.) See the RESOURCE Section for more ideas.
- Host a celebratory and/or informational event and invite local performers, schools, environmental groups, artists, businesses, and others to participate.
- Throw a block party

SOURCES/REFERENCES

Starting a Community Garden; The American Community Gardening Association website 2010;

www.communitygarden.org/learn/starting-a-community-garden.php

From Neglected Parcels to Community Gardens: A Handbook; Wasatch Community Gardens, 1989;

wasatchgardens.org/files/images/FromNeglectedParcelsToCommunityGardens.PDF



2. CHOOSING A SITE

Assessment Criteria

When assessing potential sites, ideally your garden should:

- Be within walking distance – or no more than a short drive – from you and the neighbors who have expressed interest in participating. More importantly, the site should be open and visible to the public – perhaps on a public transportation route and near other community gathering places such as schools, senior centers and churches. (Isolated gardens are more likely to be vandalized and gardeners may not feel safe to be there alone.)
- Get plenty of sun – at least eight hours each day.
- Have a source of potable water.
- Be free of pavement, trash and debris. Any rubble or debris should be manageable – that is, it can be removed by volunteers clearing the lot with trash bags, wheelbarrows, and pickup trucks. Consider past uses of the land. Is toxic or hazardous ground and/or water contamination a concern? One of the first things you should do is test the soil for any hazards to human health as well as its suitability for growing vegetables. (Consult our ADDITIONAL RESOURCES section for more information.)
- Be relatively flat (although slight slopes can be terraced).
- Be accessible (i.e. consider proximity to public transit, parking and ease of access for the disabled).

Since asphalt is petroleum-based product, garden experts don't recommend putting raised beds on top of it. It's best to remove entirely. However, bear in mind that removing asphalt or concrete to create your garden will be much more difficult, expensive, and time-consuming than starting with pavement-free land.

While some groups opt for fencing their community garden, others consider it to be an unfriendly barrier. If you do choose to install fencing, be sure to include a gate wide enough for a vehicle to enter.

Determine Who Owns the Property

You can go to the Napa County Assessor's office located at 1127 First Street, Suite # 128 in downtown Napa (call 707-253-4466) and give them either the full address or the address of the neighboring buildings to obtain the parcel number and the property owner's name and contact information.

Contact the Landowner

Once you have determined ownership, write a letter to the landowner asking for permission to use the property for a community garden. Be sure to mention the value of the garden to the community and the fact that the gardeners will be responsible for keeping the site clean and weed-free (this saves landowners from maintaining the site or paying city weed abatement fees). You may also offer fresh seasonal produce as part of the agreement!

LOCAL TIP - Currently, the Napa Department of Park & Recreation is considering offering residents access to some park sites for future gardens. For more information, contact the Parks Dept. at 1100 West Street in Napa, or call (707) 257-9529.

You should also ask the owner if the site has an existing water meter hook-up, enquire about the site's history (was there formerly a gas station or industrial use on the parcel?) and have the soil tested. First to establish nitrogen and other nutrient levels and determine soil health and any necessary amendments, and secondly to rule out health hazards such as arsenic and lead. See **APPENDIX A** for a sample letter to the property owner and the ADDITIONAL RESOURCES section for a list of soil testing labs.

Once you get the owner's permission, you can contact the water service provider in your area and ask them to conduct a "site investigation". Existing access to water will make a critical difference when calculating the expense of getting your project started and keeping it going/growing. Depending on the size of your garden site, you will need a 1/2-inch to 1-inch water meter. If there has been water service to the site in the past, it is relatively inexpensive to get a new water meter installed (if one doesn't already exist).

Legal Considerations

Establish terms for use of the site, and prepare and negotiate a lease. Typically, groups lease garden sites from land owners for \$1 per year. You should attempt to negotiate a lease for at least three years (or longer if the property owner is agreeable). See **APPENDIX B** for a Sample Lease Agreement.

Again, your municipality or the County may specify additional conditions. For instance, the City of Napa required the Napa Community Garden Association to obtain a use permit before starting their project at Jefferson and Trancas Streets. This can be time-consuming and expensive and can derail a project if you aren't prepared. Contact your local planning department early on so you know what to expect.

DISCLAIMER #3 - We strongly recommend that you contact legal and insurance professionals when considering any agreement or formal arrangement related to your project.

Liability Insurance

Landowners of potential garden sites might be concerned about their liability should someone be injured while working in the garden. In terms of obtaining liability insurance, your group may be able to negotiate with the property owner (i.e. a church, city or private entity) to add your garden as an additional insured to its existing policy. This is the best option as it is typically inexpensive and low risk.

Should this option not be possible, your group should be prepared to offer the landowner a lease with a "hold harmless" waiver. This waiver can simply state that should one of the gardeners be injured as a result of negligence on the part of another gardener, the landowner is "held harmless" and will not be sued. Each gardener should be made aware of this waiver and should be required to sign an agreement in order to obtain a plot in the community garden. Bear in mind however, that this means that the garden entity must then carry its own insurance, which may be more costly. Be advised that in such a case, all users should hold the garden harmless as well.

See **APPENDIX C** for a sample gardener contract or agreement form that your group can use as a model.

SOURCES/REFERENCES

Garden Works Twin Cities Community Start-Up Guide http://celosangeles.ucdavis.edu/garden/articles/startup_guide.html

Nolo Press www.nolo.com

3. PREPARING & DEVELOPING A SITE

Basic Elements – The ‘Must-Haves’

The garden should get **direct rays of the sun** all day if possible. Some crops can tolerate partial shade, but no amount of fertilizer, water, or care can replace needed sunshine. Even where trees do not shade garden crops, tree roots may penetrate far into the soil and rob crops of moisture and plant food.

Good soil for growing vegetables must be protected by proper cultivation, the incorporation of organic matter, maintenance of soil fertility and pH balance, and control of plant pests. Properly prepared soil provides a desirable medium for root development, absorbs water and air rapidly, and usually does not crust badly. You’ll want to look for the following soil characteristics for your garden:

- Fertile, deep, friable, well-drained
- Well supplied with organic matter
- Moisture-retentive, and reasonably free of stones.

An **adequate water** source is crucial in our Mediterranean climate because it doesn’t typically rain during the summer growing season. Setting up an irrigation system is the single most important factor in developing the garden site and having your garden on a timer-activated drip irrigation system saves water and money. Be sure to consider what obstacles are in the area – trees, bushes and structures such as sidewalks are common. Consult with your local hardware store to find out what type of piping you should use. Also, be sure the water source has adequate pressure to deliver the water to your garden.

LOCAL TIP - Upper Valley Disposal offers drip hose recycling for the wine grape industry. Some of this material may be available for re-use. Contact them at (707) 963-7988 or visit their website at <http://uvds.com/>

Consider approaching local vineyards to see if they have old or extra drip line irrigation materials to donate to your garden project. Sample drip irrigation system plans can be found online. You should also try to capture rain when it does fall, if possible. Old wine barrels make excellent rain barrels and are relatively easy to prepare. These instructions are also readily available on the Internet.

LOCAL TIP - Learn more at about local water conservation efforts, including events, resources and free water-saving-devices at www.cityofnapa.org/. Visit the Water Division of the Public Works section of the site and click on “Water Conservation”.

Fertile soil that is **well-drained** is essential to the health of your garden as it allows oxygen and nutrients to move freely to and from your plants.

By adding **organic matter** to sandy soil, you improve the ability of the soil to retain water and nutrients. In a clay soil, it will loosen the soil structure to allow better drainage and make it more healthful. You can increase the organic matter in your garden by adding compost or applying it as a top dressing or mulch.

Seeds should be ordered well in advance of planting time, but only after the preparation of a garden plan that shows the size of the plantings and the quantity of seed required. Once you get going on your garden, take advantage of seed swaps. Go to the National Gardening Associations website to learn more: www.garden.org/seedswap/

TIP - For ideas on sharing seeds and knowledge, check out the Sustainable Seed Company (located in Petaluma) at www.sustainableseedco.com

Other Additions – The ‘Nice-to-Haves’

Other additions you may want to consider to enhance and protect your investment can include the following items. Although not absolutely necessary, you may find that they provide benefits to make your garden healthful and sustainable for years to come.

- Greenhouse
- Trellis system
- Fencing
- Composting system
- Rainwater harvesting
- Tools for all to share
- Storage shed with lock
- A gathering area for meetings, classes, conversations and celebrations

Greenhouses were once considered a luxury, but in recent years, they have become more affordable. They extend your growing season, allowing you to begin growing your garden earlier in the spring and later in the fall.

Creating a **trellis system** encourages healthy plant growth. It keeps the vines of your fruits and vegetables (especially tomatoes) off the ground to prevent disease and rotting and can maximize planting space. There are several pre-made options for trellis systems that can be found at your local garden store. Be sure to routinely check that you're training your plants to the trellis system to ensure effectiveness.

Fencing can be as simple as surrounding your garden area with chicken wire. Dig an inch or two down to prevent rodents and pests from going under the fence. Although this can help in preventing furry adversaries from getting to your crop, you'll want to monitor the effectiveness of your fence and make adjustments, if necessary.

Instead of throwing away your leftover vegetables and grass clippings, consider **composting** them. See the next section on Layout & Design for more on composting.

A **tool storage shed** is an excellent spot to store **shared tools** as well as implements gardeners don't want to have to bring to the garden every visit, then take home again. A combination lock gives everyone access. Expensive equipment can be chained and padlocked inside for extra security.

Rainwater harvesting is simply intercepting rain run-off and putting it to good use. Systems are relatively easy to create. Rainwater falls onto a roof surface; gutters capture the water and divert it to a downspout; the downspout connects to a tank (or cistern) where it remains until used. For irrigation, a tank at ground level or raised slightly is sufficient water pressure and you shouldn't have to filter it. You can add a pump if you need more pressure. More elaborate systems, especially those designed for interior use, might include multiple tanks with filters, pumps and controls. One inch of rain on a 1,000 square-foot roof yields approximately 600 gallons. How much can you collect? Multiply your collection surface area by the inches of annual rainfall to get your annual cubic feet of water. Divide your annual cubic feet of water by 7.43 to get your gallons per year. For instance, a 1,000 square-foot roof getting 28 inches of rain/year will provide 2,333 cubic feet or 17,337 gallons/year. The cost of a tank depends on size – a 575 gallon can cost \$575 while a 3,000 gallon is about \$600.

LOCAL TIP - Hot talk 560 am has a great garden radio show 7 to 10 am every Sunday and call-ins are welcome.

Layout & Design

Approach your overall garden design by laying out the proposed plots on a paper grid in reasonable sizes, such as 10x10 squares. Individuals may find one plot sufficient for their needs, while families may want two (i.e., a 20x10 plot). Your sketch will immediately show you the maximum number of gardeners you can accommodate, and you can plan your recruitment efforts based on this number.

If the garden is going onto previously unplowed ground, consider hiring someone with a small tractor to come in and disk the entire garden before you mark plot boundaries and lay irrigation feeder lines. Individuals can come in after that to incorporate organic amendments and give the soil a second turning by hand much more easily. Because your gardeners may range in age from young children to seniors, turning the soil mechanically at first gives those with less physical strength a welcome head start.

If you are going to put in an irrigation system, straight rows are preferable as you can get more plots in if the layout is done correctly. That being said, raised beds allow you to distribute compost with minimal waste. And because you're not walking between rows as you work, the integrity of the soil structure is maintained, resulting in better yields. Bear in mind however, that if you opt for raised beds, you will need special adapters for a drip irrigation system to ensure that water drips only over the beds.

If you're planting a vegetable garden for the first time, here are some practical tips on building a raised bed for your garden.

Building a Raised Bed Garden Box

Raised beds permit easier access, eliminate boundary disputes, allow the soil to heat up faster for spring planting, and can compensate for poor soil fertility and drainage. They can make gardening feasible in areas where removal of pavement is prohibitive or the soil is unfertile or contaminated. They can also mitigate the effects of pests and frost by serving as barriers or by easily accommodating screens. While it may be expensive to build them, they can help keep out gophers, which is a plus!

Tools Needed:

- Power drill
- Circular saw (if wood isn't pre-cut to your desired size)
- Screw driver

Depending on the size of your desired garden box, the materials described below will vary accordingly. Two 2x12x12 pieces of wood will give you a 6'x6' garden box (square) or a 3'x9' box, given even cuts.

Materials Needed:

- Two 2x12x12 pieces of wood (cedar is preferable)
- 2" or 3" deck screws
- Soil to fill
- Desired vegetables and/or herbs
- Paint or stain, if desired
- 12 L-joint fasteners (optional)
- Shovel
- Wheel barrow
- Gloves – leather gardening and/or work gloves recommended
- Access to a water spigot or watering can

Step 1: Pick a spot that can accommodate your garden box and that receives at least eight hours of sunlight each day. Be prepared to begin planning and planting in the early spring.

Step 2: Cut your wood in even sizes (example, cut two 3' pieces and two 9' pieces). Avoid using treated wood as it contains chemicals that can be absorbed into the soil and hurt your vegetable garden.

TIP – Use an old box spring as an easy, pre-made garden box. Simply strip the box spring of cloth and use the wood frame. It's also a great way to recycle something that usually ends up in a landfill.

Step 3: Fasten sides together using deck screws and L-joint fasteners (optional use of fasteners).

Step 4: Fill box with 1/3 compost, 1/3 soil and 1/3 composted or well-aged manure.

Optional: Lining the bottom of your box frame with 1" aviary or hardware wire cloth before filling it with soil can help deter gophers.

TIP – For other ideas on building a garden box from scratch, visit this helpful website: <http://flowergardens.suite101.com>.

Composting for Soil Health

Hands down, one of the easiest, best and cheapest ways to ensure healthy soil and your garden's continuing success is by regularly adding compost. Compost is simply a mixture of decayed organic matter that is used to improve soil structure and provide nutrients. It contains beneficial fungi and bacteria and is commonly made from leaves, manure, grass clippings, fruit and vegetable scraps and old newspapers. This is good news. Sure, you can go down to your local garden store and buy it, but why? You have a wealth of great ingredients in your kitchen and garden. With a little effort, your compost can beat anything you can buy... and it's essentially free.

LOCAL TIP – If you need a large amount of compost to amend your soil, you may be able to get it donated from Napa Waste & Recycling Services. For more information, call (707) 255-5200 or visit their website at www.naparecycling.com. Free Composting Classes are offered every year by the City and County of Napa. You can find a current class schedule at www.cityofnapa.org/compost.

Compost Ingredients

Highly biodegradable* materials are best for your compost pile, but all of these ingredients are suitable:

cardboard	crustacean shells	fruit*	paper*	lawn clippings*
coffee grounds*	eggshells	leaves*	tree bark	coffee filters
coir (coconut inner husk)	chicken manure	mushrooms*	vegetables	tea bags
hay	straw	wood chips	sawdust	newspaper

On the flip-side, to avoid attracting vermin and maximize the efficiency of your pile, avoid adding these things to your compost:

meat/fish	bones	oils	invasive weeds or weeds gone to seed	diseased plants
dairy products	plants with stickers or spines	fatty food waste	human or carnivore pet waste	anything chemically-treated, like wood products

LOCAL TIP – Many coffee shops will happily provide you with coffee grounds for your garden. Try calling ahead to request that a box of grounds be put aside for pickup. Coffee grounds are highly biodegradable and a great starter material for your compost bin/worm box and can also be used as a top dressing.

How to Compost

Step 1: Designate a Composting Area.

- Locate a level area.
- The ideal size is at least 3'x3'x3' but not larger than 5'x5'x5'.
- Place it near a water source.
- Don't put it directly against a structure, fence, tree, or anything that the composting process might rot or destroy.
- Keep your pets away.
- Avoid direct sunlight for more than half the day and windy areas.
- If you put it under a tree, consider some sort of foundation to deflect tree roots.
- If you don't like the way it looks, camouflage it.

Most of all, make it convenient.

Step 2: Design a composting system.

There are a lot of options. Some are virtually free. Others can be very elaborate and expensive. You can go binless by simply designating a convenient place to start a pile. You can build a bin using new wood, salvaged wood, and pallets – just make sure that they haven't been chemically-treated. Conversely, you could purchase a ready-to-use bin. No matter which way you go, design a system that is simple and suits your needs.

The number of bins should also be determined. One-to-three bin systems seem to be the norm. One bin is the simplest way to start, but keep in mind that you have to turn it because the stuff on the bottom will decompose first. Two and three bin systems make turning and tending the piles easier because you can basically flip the pile over into an adjacent bin.

Step 3: Cover the basics.

The 'Must-Haves'

- **Water (moisture).** If your pile is dry, decomposition will slow down significantly. Fruit, vegetables, and lawn clippings can provide a lot of moisture. In the rainy months, you may want to cover the pile with a tarp so it doesn't get too soggy.
- **Air.** Make sure plenty of air can pass through your pile or it could start smelling like a dump. Mix it up with a spade or pitchfork. Get air into the center of the pile.
- **Food (Carbon and Nitrogen).** You need a good mix of "browns" (Carbon source - dead or dry material like leaves, straw, sawdust and paper) and "greens" (Nitrogen source - fruit, vegetables, lawn clippings, and coffee grounds). A proper mix will help provide the necessary nutritional balance to feed all the microbes and make the pile break down efficiently.

The 'Must-Dos'

- The smaller the items placed into your pile, the faster you will have compost.
- The more you mix it up, the faster it will decompose. Once a week is great.
- Maintain a balance of air, moisture, Carbon, and Nitrogen. This balance will influence the temperature.
- Keep it hot – around 130 degrees. You can use a meat thermometer to get your reading, but a composting thermometer is better.
- Alternate layers. Start with "greens" then "browns," then add "greens" followed by more "browns," and so on.
- Add water as needed to maintain the moisture level to that of a wrung out sponge.

Step 4: Enjoy the fruits of your labor and the money you've saved.

Composting is economical in two key ways. First of all, you don't have to buy it if you make it yourself. Secondly, your waste bill is reduced because you are throwing less away. Think about it. In 2008, 36,756,666 Californians disposed of 39,722,818 tons of waste. That's 2,161 lbs. of waste per person. 15.5% of this waste was food material, more than 75% of which could have been composted.

A Bit About Worm Composting (or "Vermicomposting")

- You need an enclosed bin, moist bedding (i.e. shredded leaves or paper), and some kitchen waste buried in the bedding.
- The worms will graze the decomposing food waste.
- The worms poop, creating "worm castings." These castings make excellent compost for soil amending and are a mild fertilizer.
- The favored worm types are red wigglers.
- Beware – Worms can be harmed by oils found in some cedars and redwood.

What to do with your compost

Your compost is ready for use when it is damp-dry and has an earthy smell. Typically, you will not be able to distinguish any of the ingredients except potentially things like straw and twigs. This said, there is no clear "finish" point. It's ready when you think it's suitable for your application. With a well-designed composting system, you should see fine, rich garden compost within three to six months.

Compost as a Soil Enhancer

Adding organic matter, like compost, improves the way water interacts with the soil. In sandy soils, it can help retain water and hold nutrients. It helps make clay soils more porous and have better drainage. The nutrients provided help feed your plants.

Compost as Mulch

Used as a "top-dressing", it helps reduce erosion. As it further decomposes, the nutrients flow into the soil.

See **APPENDIX D** for a Compost Tea Recipe

A Word about Fertilizer

A fertilizer contains some combination of the three things necessary for plant nutrition: Nitrogen, phosphorus, and potassium. Organic fertilizers are naturally-occurring, like mineral deposits, peat moss, manure, seaweed, and worm castings. Consider using blood meal, bone meal, cottonseed meal, grass clippings, and wood ash. Using manure in an organic garden is debatable and a matter of personal preference.

Creating a Budget

Design

Depending on how extensive your garden project is, hiring a professional landscaper or garden designer to draw up plans for you could cost several thousand dollars and is not always an alternative when trying to stay within a budget. Studying garden design books from your local library is a good place to start. If you can't find exactly what you are looking for at the library, head to your local home improvement center. The staff in the garden department is usually quite knowledgeable and willing to give advice. Or, look to other community gardens and borrow their ideas.

Seeds

Garden centers and nurseries are usually the most expensive place to buy seeds and planting materials, but they offer a larger variety of high quality seeds that will be less likely to die. There are also good seed catalog sources online. Seed exchanges may give you access to unusual heirloom varieties. This option is better for more experienced gardeners.

Soil Amendments

If you're composting on site or have arranged a large delivery from Napa Waste & Recycling Services your costs should be very low. Purchased amendments will be more expensive. Consider leaving such purchases to the individual gardeners. Also consider specifying parameters such as "only organic materials" or non-toxic amendments.

Tools

Basic garden tools include forks, spades, shovels, hoes, rakes and wheelbarrows. Many of these items may be donated. Rototillers can be rented or borrowed but are expensive to buy. Individual gardeners will expect to supply items like tomato cages, row covers and mulch, but posting a sheet of available shared resources inside the tool shed door can be very useful.

Commercially available garden accessories like gazing balls, statues and trellises enhance the appearance of any garden, but they can be costly. Instead of breaking your budget to buy accessories, use your imagination. An old spindle headboard or antique wooden ladder can become a trellis, old bricks covered in vibrant paint colors make a whimsical garden border, and wooden barrels and old wash tubs make rustic looking planters.

Recycling or Salvaged Materials

No matter where you live or where you shop, you are always going to find a good deal here and there, but nothing beats free gardening materials. If there is a construction site near your home, don't be shy about asking what they do with leftover materials. Many contractors will give excess materials such as bricks, soil or screening away rather than having to remove or dispose of them themselves when their job is finished.

Be careful not to allow dumping of unusable tools or other junk on site that may create a trash/hauling issue or cost.

Selling Produce

Depending on how much food you produce, consider offsetting your cost by selling a portion of your vegetables and/or fruits. During the harvest season, even setting up a simple roadside stand can bring customers. Use the proceeds of your sales to re-invest in your garden and add a line item of income into your annual budget.

LOCAL TIP – *Napa County has strict rules for those in the commercial agriculture business. Check with the County Agriculture Commissioner before you consider selling produce. Additional City ordinances may apply for commercial enterprises.*

See **APPENDIX E** for a simple Sample Budget.

Obtaining Money & Materials

In establishing and maintaining your garden, you will need to consider funding. In recent years, there has been a renewed national enthusiasm for gardening. There are programs on the local, regional, state and national levels, which you may want to consider as you plan your project. Member dues are also a good source of base income to cover items like water, needed tools and the like.

Grant dollars are available nationwide for garden projects that have a clear purpose for serving the community or youth. Schools, youth groups, community centers, camps, clubs, treatment facilities, and intergenerational groups are the types of organizations that are eligible for local, state and even national grant dollars when the project has an emphasis on these elements:

- Environmental awareness/education
- An educational focus integrated into a curriculum
- Nutrition
- Entrepreneurship
- Leadership development
- Team building
- Supporting your community

TIP – *For more information on obtaining grant dollars, visit the National Gardening Association at www.assoc.garden.org.*

If seeking grant dollars seems too difficult, you may want to consider soliciting donations from local businesses, non-profits and/or neighbors. You'll want to write a solicitation letter to distribute to these potential donors. Begin by outlining your objectives and estimating the total cost of the project. Here are some questions that should be considered in developing your letter:

- Who will be involved and who is currently involved?
- Who will lead the project?
- What are you looking for? If money – how much and what will it be spent on?
- What is the total cost of the project?

It's important to organize a follow up strategy before sending out or delivering letters for solicitation. Be clear on your key objectives and keep a list of everyone you've distributed the letter to. Plan to follow up with a phone call to answer any questions your donor prospects might have. See **APPENDIX F** for a Sample Donation Request Letter.

SOURCES/REFERENCES

Suite101.com: <http://flowergardens.suite101.com>

Hopkins Technology: www.hoptechno.com

United States Department of Agriculture: www.nrcs.usda.gov

National Gardening Association: <http://assoc.garden.org/grants/>



4. KEEPING YOUR GARDEN GROWING

- Climate & Seasonal Considerations
- Site Management & Maintenance
- Composting for Soil Health
- Ground Rules/Policies
- Application Procedures (Review & Selection)
- Communication
- Maintaining Positive Community Relations

Climate & Seasonal Considerations

Gardening in the Napa Valley offers distinct benefits. In addition to a long growing season, it encompasses a variety of microclimates. While it also offers challenges as a Mediterranean climate with limited rainfall and hot, dry summers, we (and plants) also benefit from cooler evenings. The good news for neophytes and veterans alike is that most anything can be grown here with adequate irrigation and frost protection.

What should you plant? When should you plant it to maximize your potential for success? Refer to **APPENDIX G** for a handy chart on What to Grow When. It includes some common varieties to get you started, no matter what time of year you begin.

Site Management & Maintenance

A high-quality community garden program requires good management techniques. Having written rules is very important to established groups as well as new gardens, since they spell out exactly what is expected of each gardener. They also make it much easier to deal with challenges as they arise. Included here are some questions to consider when devising a site management plan.

- Are there conditions for membership (residence, dues, agreement with rules)?
- How will plots be assigned (by family size, by residency, by need, by group -- i.e., youth, elderly, etc. or simply by chronological order of requests)?
- When will the garden be accessible?
- How large should plots be? (or should there be several sizes based on family size or other factors?)
- How should plots be laid out?
- If the group charges dues, how will the money be used? What services, if any, will be provided to gardeners in return?
- Will the group do certain things cooperatively (such as turning soil in the spring, planting cover crops, mulching or composting)?
- When someone leaves a plot, how will the next tenant be chosen?
- How will the group deal with possible vandalism?
- Will there be a children's plot?
- Will the gardeners meet regularly? If so, how often and for what purposes?
- Will gardeners share tools, hoses, and other such items?
- How will minimum maintenance (especially weeding) be handled both inside plots and in common areas (such as along fences, in flower beds, and in sitting areas)?
- Will there be a set of written rules which gardeners are expected to uphold? If so, how will they be enforced?
- Should your group incorporate and consider eventually owning your garden site?
- How will trash be collected/disposed of?
- Will dogs be permitted? If so, on or off-leash?

Ground Rules/Policies

Members must decide how many plots are available and how they will be assigned. Allow space for storing tools, making compost and don't forget the pathways between plots! Planting flowers or shrubs around the garden's edges can promote good will with non-gardening neighbors, passersby and municipal authorities and encourage beneficial insects and animals like birds.

TIP - Consider creating a special garden just for kids – including them is essential. Children are not as interested in the size of the harvest but rather in the process of gardening. A separate area set aside for them allows them to explore the garden at their own speed. See the section on School Gardening for more information.

The gardeners themselves devise the best ground rules. Generally speaking, people are more willing to comply with rules that they have had a hand in creating. Ground rules help gardeners to know what is expected of them. Think of it as a code of behavior. Some examples of issues that are best dealt with by agreed-upon rules include the amount of dues (if any), how money will be used, how plots are assigned, and how tools and ongoing maintenance tasks are shared. See **APPENDIX H** for some Sample Ground Rules and **APPENDIX I** for a Sample Gardener Application.

Some common elements of a successful community garden include:

- Active coordinators
- A spring sign-up meeting
- A fall wrap-up meeting
- Annual dues
- Written rules/policies
- A list of gardeners' addresses and phone numbers
- A written waiting list
- Periodic clean ups
- A consistent garden presence/caretaker plan
- Task assignments/work requirements
- A garden winterization plan
- Planned social events
- Neighborhood outreach
- An equipment wish list

Communication

Keep in mind that one of the most important elements of a successful community garden is good communication between members. Good communication ensures a strong community garden with active participation by all. Some ways you might maximize communication among participants and your steering committee, include:

- Forming a telephone tree;
- Creating an email list;
- Installing a rainproof bulletin board in the garden;
- Having regular celebrations.

Maintaining Positive Community Relations

While community gardens are ostensibly about growing good, healthy food to eat they all, at root, contribute to creating and strengthening healthy communities. Good communication with the community at large will ensure greater participation and exponentially increase your chances for long-term success. Here are some suggestions for increasing good will with immediate neighbors and the community-at-large:

- Host an annual harvest party;
- Hold a neighborhood open-house;
- Donate food to a local homeless shelter;
- Offer educational workshops for home gardeners;
- Keep your garden going/growing!

SOURCES/REFERENCES

www.communitygarden.org/learn/starting-a-community-garden.php#choose

How to Manage Your Community Garden, www.communitygarden.org/learn/starting-a-community-garden.php#choose

Starting a Community Garden, www.communitygarden.org/learn/starting-a-community-garden.php#new

Ten Steps to Starting a Community Garden, <http://communitygarden.org/docs/10stepsstart.pdf>

Site Maintenance, www.bostonnatural.org/communitygardens.htm

Boston Natural Areas Network

5. BUILDING YOUR SCHOOL GARDEN

Determining Need

Building a school garden can be a very rewarding experience and allows you to create a hands-on learning environment for students. Watching a garden grow provides students with an opportunity to understand all aspects of a plant's life cycle and helps them make the connection between food found in packaging in the supermarket and where it actually comes from. It's also a great way to add nutrients to students' diets.

Start by determining if your school has a need for – and is permitted to have – a garden. This determination can be based on a number of considerations, including the garden's contribution to:

- Building stronger academics (science, math, social science etc.)
- Increasing hands-on learning
- Understanding how and where food is grown
- Enhancing students' understanding and appreciation of community building
- Supplementing cafeteria food
- Connecting students with adult mentors
- Increasing fundraising (selling produce grown in the garden)

In determining need it is essential to get input from key players in all aspects of your school. The primary people to discuss the need of a garden are:

- The Principal
- Teacher(s)
- Leader(s) in the local parent group

If the need for a garden is widely felt and you have the support of key administrators and parents, you are ready to move to the next step.

Gathering Resources

The next step involves assembling your partners in the project (i.e. the Garden Committee). Having buy-in from the Principal is paramount. Having the support of a teacher(s) to help with the day-to-day management of the garden will help considerably. And the local parent group's participation can go a long way when it comes to organizing families and determining watering schedules and assigning tasks over longer breaks.

Given the demonstrated generosity in Napa County on the part of local nurseries, hardware stores, viticulture supply shops and wineries, a donation request could help you gather most of the tools you need for your garden.

LOCAL TIP – *The non-profit alliance of Napa Valley Vintners is working with the Napa County Office of Education to pair every school in Napa County with a local winery. The Adopt-a-School program is designed to create a mutually beneficial partnership between the winery and the school. To determine which winery has partnered with your school, speak with your principal or call the Napa Valley Vintners directly at 707-963-3388 and ask for the Adopt-a-School program manager. Read more online at www.napavintners.com/programs.*

Finally, if funding is required to get your school project off the ground, work directly with your parents association on a fundraiser to help defray the cost of any additional items you might need.

Creating the Garden

For the purposes of a school garden, location is everything. In working with your Garden Committee, pick a site that is beneficial for the school. Take into consideration that a garden could be used as a campus beautification project and placed in the front of the school. On the other hand, if you are concerned with neighbors helping themselves to your produce, planting your garden out of sight and in a hard-to-reach section of school grounds could be a better bet. Bear in mind that if you need to use heavier equipment to supplement or till the soil or require large deliveries of supplies, such as soil, mulch or compost, then ease of access is important.

Once a location is determined, work with the teacher to determine a schedule of students to come in and do the hands-on work. This will create a sense of ownership by the student population. Additional resources on box building, composting, appropriate plants and irrigation are included in other sections of this guide.

Keeping it Growing

Once the location has been determined and the students have built the garden and sowed the seeds, keeping it growing during summer break might be one of the bigger challenges you face. During this peak growing season, gardens tend to produce the most and they require more irrigation when faced by the often high temperatures in the Valley. Even automatic irrigation systems require check-ups – they can fail due to power outages, battery issues, damage or vandalism. Creating a schedule of reliable parents to oversee garden maintenance will be imperative to keeping your garden alive and well – and viable for the return of students in August. The incentive of fresh produce could be offered to families who are willing to take responsibility.

Lesson Plans

The Internet has many resources on developing lesson plans for your schools garden. In addition, there are many local resources that are available to you with experts ready, willing and able to provide hands-on expertise to your garden. These resources include (but are not limited to):

- UC Cooperative Extension Master Gardener Program
- Napa County Farm Bureau, Ag in the Classroom
- Local Wineries
- Vineyard Management Companies

**Contact information can be found in the ADDITIONAL RESOURCES section*

LOCAL TIP – The Napa County Farm Bureau “Agriculture in the Classroom” (AITC) program supplies teachers with a free resource guide and lesson plans to enable teachers to teach interesting, informative curricula that meets content standards for California public schools. Check out AITC’s website www.cfaitec.org for more information on their lending library, ambassador program open to all educators and their school garden project or call (707)224-5403.

Lesson plans can focus on:

- Science
- Math
- Social Science
- English
- Writing

TIP – Another good source for information and curriculum is the California School Garden Network website at www.csqn.org.

As the School Garden Wizard website states: “A school garden offers a wonderful, creative space in which children of all abilities can achieve something real that is valued by others.” www.schoolgardenwizard.org/.

SOURCES/REFERENCES

Napa County Farm Bureau

Napa Valley Vintners

6. TROUBLESHOOTING

Weeds

Permitting weeds to grow unchecked in your garden is unwise because they reduce the moisture, nutrients, sunlight and growing space needed for your crop to grow and thrive. They can also harbor diseases and pest insects that can affect your garden or become a fire hazard when dry. Here are a few solutions for keeping your garden weed-free.

- **Organic mulch** can help stop weeds from germinating by keeping out sunlight. Shredded bark or hardwood is an excellent weed-preventing mulch. This is most effective if you put a weed barrier underneath the mulch such as newspaper and mulch at least 3-4 inches deep. The larger the pieces of mulch, the deeper the layer needs to be.
- **Fast growing crops** suppress weeds via shading. Squash, beans, pumpkins, peas, cucumbers, corn, melon, and potatoes are all fast growers, while lettuce, carrot, pepper, greens, onion, peas, broccoli, cabbage, and radish tend to grow more slowly and allow weeds to grow. If weeds get out of control, low-toxic weed control such as tilling may be a good option.
- **Horticultural vinegar**, or acetic acid, is effective at killing certain weeds. Avoid spraying other green vegetation, such as turf grass, since this is a non-selective plant killer. Please read the label carefully and follow the directions.
- **Herbicidal soaps** are highly refined soaps that can penetrate the waxy coating on plant leaves, causing them to dry out. Some of these products also contain essential oils that enhance their herbicidal properties.
- **Weed blockers** like weed cloths, "landscape cloth" or woven weed barriers may be inorganic but they can be a good option for controlling weeds, especially along pathways. Black plastic (polyethylene film) is not recommended because it blocks air movement in soil.

TIP – *Sheet mulching* is another good way to kill and reduce weeds. See www.marinwater.org/documents/sheet_mulching_guide.pdf for more information.

TIP – *Trying to ID your weeds?* You can find a list of common weeds with photos at www.ipm.ucdavis.edu/PMG/weeds_intro.html

Pests

Planting a mix of flowers, fruits, and vegetables will keep the pests guessing, and make it harder for them to creep in. The most successful gardens have just enough:

- Beneficial insects and animals
- Water
- Soil aeration
- Care and attention
- Nutrients

Attract Helpers

Flowering plants can also attract helpful predators like birds and insects that eat the pests your garden may tend to attract. The best plants have lots of small flowers with pollen and a long flowering season. Here are some examples of such beneficial plants by their common names.

Aster	Chrysanthemum	Fleabane	Rudbeckia
Baby blue eyes	Coriander	Holly-leaved cherry	Sunflower
Calendula	Cosmos	Monkey flower	Sweet alyssum
California lilac	Coyote brush	Native buckwheat	Tidy-tips
California poppy	Dill	Pincushion flower	Toyon
Chervil	Elderberry	Rosemary	Yarrow

See the ADDITIONAL RESOURCES section for more information about pest versus predator insects and beneficial insectary plants.

Use Pest-resistant Plant Material

Look for plants that are resistant to diseases and pest insects. Ask your garden center for good varieties and plants that do well in our climate. Maintain good soil health by adding organic matter and nutrients refer to the Composting section of this guide to learn more about improving soil health.

Consider an Integrated Pest Management (IPM) Plan

According to the book *Common-Sense Pest Control*, integrated pest management is, "an approach to pest control that utilizes regular monitoring to determine if and when treatments are needed, and employs physical, mechanical, cultural, biological and educational tactics to keep pest numbers low enough to prevent intolerable damage or annoyance."

Maintaining a Pesticide-Free Garden

Step 1 – Establish a Watering Routine

Help plants flourish without pesticides by creating a watering routine for your entire garden that fluctuates based on drought or rainy conditions.

Step 2 – Mulch

Apply mulch to your garden soil early in the planting process. Organic mulch used around trees, bushes and plants helps retain moisture and can add nutrients as they break down.

Step 3 – Prune

Prune your trees and large plants frequently. Dead and dying branches offer a refuge for garden pests of all sizes.

Step 4 – Keep it Clean

Dispose of dead branches and plants as the need arises. Pruned branches can be disposed of immediately. Plants that stop living through the growing season should be uprooted as soon as possible.

TIP – Have a gardening question? Contact UC Master Gardeners of Napa County for free gardening advice on Monday, Wednesday or Friday from 9:00-12 noon. Call or drop by with your questions and plant samples (707) 253-4221; American Canyon & Upvalley call (877) 279-3065. UC Cooperative Extension, 1710 Soscol Avenue, Suite 4, Napa, CA 94559. Email: mastergardeners@countyofnapa.org. Website: <http://cenapa.ucdavis.edu>. UC Master Gardeners of Napa County volunteers are University-trained local gardeners who donate their time assisting local gardeners improve their chances of success.

Pest Control Methods

A pesticide is any substance or mixture of substances intended to prevent, destroy, repel or mitigate a pest. It may be a chemical substance, biological agent (such as a virus or bacterium), antimicrobial, disinfectant or device. Pests include insects, plant pathogens, weeds, mollusks, birds, mammals, fish, nematodes (roundworms), microbes and people that destroy property, spread or are a vector for disease or cause a nuisance. Although there are benefits to the use of pesticides, there are also drawbacks, such as potential toxicity to humans and other animals. An insecticide is a pesticide used against insects and an herbicide is used for controlling weeds.

When planning and maintaining your garden, it is preferred that you use only non-toxic remedies for your pest problems. But, just in case going *au natural* isn't doing the trick, we've also included some low-toxic options.

Non-toxic Pest Control Products

- **Traps** – Traps are available for a variety of pests in the form of sticky traps, glue boards, flypaper, bug zappers, and traps for specific critters like mice, gophers, or moles.
- **Pheromones** – Insect scent hormones can be used to bait traps. By emitting the scent of the female insect, males can be drawn into a trap, where they are caught in a sticky glue substance. Note: Insects are only attracted by pheromones emitted by their own kind, so you need to know exactly what kind of insects you're trying to eliminate and plan accordingly.
- **Biological Control** – Using desired organisms to eliminate undesired organisms. For example, spearmint repels ants and spiders eat fruit flies and houseflies. For more natural pest control measures, see **APPENDICES J and K**.
- **Non-Toxic Repellents** – Natural substances like eucalyptus and wormwood repel animals and insects. Victor is a good source for traps (www.victorpest.com) while Victor's sister brand Victor Pest-free Solutions (www.saferbrand.com) offers baits and sprays. Locally, Victor products can be found at Ace Hardware stores.

Least-Toxic Insecticides

- Dormant oil
- Insecticidal soap
- Bacillus thuringiensis (BT)
- Pyrethrins (from pyrethrum daisy)
- Insect growth regulating hormone
- Diatomaceous earth

TIP – Simple Ways to Discourage Flies

Place small sachets of crushed mint, bay leaves, clove, or eucalyptus around the area, or hang by open doors and windows.

When using any pesticide, follow the instructions on the label. It's best to avoid more toxic chemicals altogether. These are indicated by the following:

- Caution (typically indicates least toxic)
- Warning
- Danger (typically indicates most toxic)
- A skull and cross-bones

LOCAL TIP – How to Dispose of Toxic Pesticides

Regardless of where you live, check out the US Environmental Protection Agency website (www.epa.gov) to learn the basics. The Napa County Napa-Vallejo Household Hazardous Waste Collection Facility is for safe and legal disposal of unused products. It is located at 889A Devlin Road - Open Every Friday and Saturday from 9 a.m. – 4 p.m. For more information call (800) 984-9661. All fungicides, insecticides, and herbicides are considered hazardous waste and cannot be put in the trash, on the ground or down storm drains. Disposal is free and no appointment needed.

For additional pest-control strategies, see the ADDITIONAL RESOURCES section.

TIP – Prevent Mosquitoes *by adding a teaspoon of dishwashing liquid per gallon of water, then pour the mixture into a rain barrel or other pools of water around your garden. This will destroy developing mosquito larvae. You can also get Gambusia or mosquito fish for free from Mosquito Abatement. For more information visit www.napamoquito.org/home.htm.*

Composting Challenges

Beginning and veteran composters alike may find their compost system in need of adjustment. Here are some suggestions for keeping your pile/bin “cooking”.

Problem: Damp, sweet and warm, but not hot

Remedy: Add green material to pump up the Nitrogen content and mix to add oxygen

Problem: Wet and sticky

Remedy: Add coarse, dry material like leaves and paper

Problem: Dry inside

Remedy: Add water and fresh lawn clippings, and mix

Compost Accelerators Commercial products labeled as such are expensive and not recommended. If you do a good job of maintaining a 50/50 ratio of green and brown material and have enough air and water, the pile will decompose quickly. Small pieces and more turning speed things along. Feeling impatient? Add some good soil to your compost pile. Or, better yet, consider adding worms.

Vandals

To discourage vandals:

- Use signage. Make it clear that this is community project.
- Make friends with your garden neighbors. Solicit their watchful eye and provide contact information if there is a problem.
- Inspire daily harvesting. A garden with less to take and destroy invites fewer temptations for bad behavior.
- Engage children and the curious. The more the mission is understood, the less threatening it will be. Vandals are typically among those who feel excluded.
- Show your thorns. Planting raspberries, roses, and other thorny plants around the perimeter will discourage entry.
- Create an inviting spot where gardeners will want to meet and hang out. Vandals approach when no one is around.
- When the garden is closed, make sure it's closed up.
- Only allow dogs on leashes.

Abandoned Plots

You will want to include rules about what constitutes an abandoned plot. At a minimum, tenants should be expected to regularly plant, maintain, and clean up their plot. If a tenant does not meet minimum requirements or fails to meet other gardens rules, their plot should be considered abandoned and available for another applicant. A common penalty is losing planting privileges for one year.

Conflict Resolution

The best defense against conflicts is a well-organized garden with strong, committed leadership and by-laws that clearly set out rules and expectations. Without approved by-laws, conflicts will be tougher to resolve. Establishing rules via consensus provides voice to all stakeholders. As part of the development process, talk about how conflicts will be handled before one arises and develop ground rules for resolving them. If a conflict arises and resolution procedures are not in place, try bringing in a neutral third party to help mediate the situation.

SOURCES/REFERENCES

Weeds: www.ipm.ucdavis.edu/pmg/weeds_intro.html

www.beyondpesticides.org/alternatives/factsheets/Least%20toxic%20control%20of%20weeds.pdf

Pest Control: <http://ipm.ucdavis.edu/pdf/pestnotes/index.html>

Grinning Planet www.grinningplanet.com

www.pestinformation.com

Organic Pest Management (OPM): www.organicgardeninfo.com

www.env.gov.bc.ca/epd/ipmp/publications/pest_monitor/vol1_1.htm

www.epa.gov/fedrgstr/EPA-PEST/1996/March/Day-06/pr-577.html

www.pestinformation.com/integrated-pest-management.htm

Vandals: www.communitygarden.org

www.cityfarmer.org/gardenrules.html

Abandoned Plots: www.dowlingcommunitygarden.org

www.ci.eagan.mn.us

Conflict Resolution: www.communitygarden.org/learn/starting-a-community-garden.php#solutions

www.communitygarden.org/rebeltomato/pdf/Decision_Making.pdf

[www.ballina.nsw.gov.au/content/uploads/Policy_Draft - Community Gardens %28closing_date_040310%29.pdf](http://www.ballina.nsw.gov.au/content/uploads/Policy_Draft_-_Community_Gardens_%28closing_date_040310%29.pdf)

7. ADDITIONAL RESOURCES

Garden Organization & Maintenance

- Community Garden Maintenance Checklist (maintenance activity schedule)
http://www.bostonnatural.org/PDFs/cgOr_MaintenanceChecklist.pdf
- Month-By-Month Task Organizer http://www.bostonnatural.org/cgOr_TaskOrganizer.htm
- Garden Leadership (21 tips) http://www.bostonnatural.org/cgOr_Leadership.htm
- Balance Sheet – Community Garden Record Keeping (chart) http://www.bostonnatural.org/PDFs/cgOr_RecordKeeping.pdf

Organizations

Local

- American Canyon Community Garden – Contact Sherri Burgess at (707) 648-7275; email sburgess@cityofamericancanyon.org; website: www.cityofamericancanyon.org
- Calistoga Community Garden – Contact Nick Kite at winewayinn@aol.com; website: www.ci.calistoga.ca.us
- Napa Community Garden Association – Contact Elizabeth Wroblecka at (707) 257-6154; email Elizabeth@landconservationassociates.com
- St. Helena Community Garden – email sthelenagarden@gmail.com
- UC Cooperative Extension Master Gardener Program www.cenapa.ucdavis.edu
- Native Plant Society (Napa Valley Chapter) www.napavalleycnps.org/
- Napa County Farm Bureau www.napafarmbureau.org/
- Slow Food Napa Valley www.napavalleylowfood.org/home/home.html
- Napa Valley CanDo www.napavalleycando.org/
- Napa Valley Food Bank/Gleaning Project www.canv.org/napa-valley-food-bank/; (707) 253-6128

National

American Community Garden Association www.communitygarden.org/

Soil Testing

- Cal test analytical lab, 1885 N. Kelly Road, Napa 94558 (888) 258-8378
- Harmony Farm Supply www.harmonyfarm.com/prostores/servlet/StoreFront

Composting

- How to Build the Perfect Compost Bin www.composting101.com/building-a-bin-article.html
- web.extension.illinois.edu/homecompost/building.html
- www.beginner-gardening.com
- www.vegweb.com/composting
- www.arhomeandgarden.org
- www.drearth.com (products plus information and videos explaining organic gardening methods)
- Worm Composting
 - Debbie Stevens at Worm Endings Unlimited - www.wormendingsunlimited.com
- Book – Worms Eat My Garbage by Mary Appelhoff
- Article – *Composting for Home Gardens* by Larry Bass - www.ces.ncsu.edu/depts/hort/hil/hil-8100.htm
- Blog – www.gardencomposter.blogspot.com

Irrigation

- Really Basic Drip Irrigation www.demesne.info/Garden-Help/Drip-Irrigation.htm
- Harmony Farm Supply www.harmonyfarm.com/prostores/servlet/Detail?no=237
- How to Build a Rain Barrel www.wikihow.com/Build-a-Simple-Rain-Collection-System

Municipal (Planning Department Contacts)

- **American Canyon:** 4381 Broadway Street, Suite 201; (707) 647-4336
- **Calistoga :** 1232 Washington Street; (707) 942-2827
- **City of Napa:** Community Services Building, 1600 First Street; (707) 257-9530
- **Napa County:** 1195 Third Street, Suite 201, Napa; (707) 259-8381
- **St. Helena:** 1480 Main Street; (707) 968-2657
- **Yountville:** 6550 Yount Street; (707) 944-8851

Legal

Nolo Press offers books, software, referrals and information online at www.nolo.com. Since 1971, they have been making America’s legal system accessible to everyone by offering different levels of help to fit different consumers’ needs. Some of their services are free.

School Gardens

Local Government Resources

- Napa County Office of Education www.napacoe.org
- Napa Unified School District www.nvUSD.k12.ca.us/homex.asp?Q=Homepage
- St. Helena Unified School District www.shUSD.schoolwires.com/shUSD/site/default.asp
- Calistoga Unified School District www.calistoga.k12.ca.us/
- Howell Mountain Unified School District www.hmesd.k12.ca.us/
- Pope Valley Unified School District www.popevalley.k12.napa.ca.us/

Local Non-profit Organizations

- Napa County Farm Bureau www.napafarmbureau.org/
- Ag in the Classroom www.agclassroom.org/
- Sample English lesson plan: www.agclassroom.org/directory/search_result_details.cfm?PID=1261

State Organizations

- California School Garden Network (offers grants to school gardens and curriculum) www.csgn.org/
- California Department of Education www.cde.ca.gov/Ls/nu/he/garden.asp
- California Recycle www.calrecycle.ca.gov/Education/gardens/
- UC Extension Master Gardener Program www.groups.ucanr.org/mgnapa/index.cfm

Troubleshooting

General: www.urbangardeninghelp.com

Weeds

- *Weed Management on Organic Vegetable Farms* by Vern Grubinger, University of Vermont Extension
- *Weed Control in Vegetable Gardens* by David W. Monks and Larry Bass is a great weed primer. You can find this article and many others at North Carolina State's Consumer Horticulture Service at www.ces.ncsu.edu/depts/hort
- www.uvm.edu/vtvegandberry/factsheets/orgweedmgmt.html

Pests

- Learn more about pest versus predator insects and beneficial insectary plants at Grinning Planet www.grinningplanet.com.
- Learn more about creating an Organic Pest Management (OPM) at www.organicgardeninfo.com
- www.beyondpesticides.org/alternatives/factsheets/ANT%20CONTROL.pdf
- www.ehow.com/how_2033085_keep-garden-pesticide.html
- www.eartheasy.com/grow_nat_slug_cntrl.htm
- www.ghorganics.com
- www.pestcontrolindustry.com/category/natural_pest_control-27.html
- www.ehow.com/how_4829013_naturally-rid-aphids.html
- www.gopetsamerica.com/garden/pest-control
- www.getridofthings.com
- www.gardenguides.com

Earth-friendly Garden Products

At Peaceful Valley (www.groworganic.com), you will find an Organic Pest Control Solutions Chart providing a cross-reference between the pests being managed and the products (beneficial insects, physical controls, biologicals, mineral soaps & oils, botanicals, mineral fungicides) that help control them. Websites like Planet Natural (www.planetnatural.com) and Extremely Green (www.extremelygreen.com) offer extensive catalogs of earth-friendly garden pest control products.



8. APPENDICES

- A. Sample Letter to Property Owner
- B. Sample Lease Agreement
- C. Sample Gardener Contract
- D. Compost Tea Recipe
- E. Sample Budget
- F. Sample Donation Request Letter
- G. What to Grow and When
- H. Sample Ground Rules/Policies
- I. Sample Gardener Application
- J. Non-Toxic, Do-It-Yourself Pesticides
- K. Pest Prevention: Ants, Aphids, Slugs, Snails & Gophers

Appendix A – Sample Letter to Property Owner

Property Owner
123 Grand Avenue
Our Fair City, MN 55000

Dear [name of landowner],

My name is [your name]. I am contacting you on behalf of the Sunshine Community Garden Committee, a group of Neighborhood residents working on starting a community garden in the Neighborhood. Our committee has met several times for planning meetings and has started building a strong and diversified coalition of supporters for the garden including a representative of the Community Hospital Employee Advisory Council (who offered volunteers), the Sweet Library Branch, the Neighborhood Community Council, and the Lutheran Baptist church. We've also had the ongoing support of an experienced community garden organizer from the local non-profit organization, GardenWorks, who has attended most of our meetings.

We've been searching for potential sites for the Sunshine Community Garden (SCG) and have come across your property at 926 Grand Avenue. As you might guess, the purpose of this letter is to inquire about the possibility of using your land as the site of the garden.

We'd love to speak with you in person or over the phone to discuss what hosting a community garden on your property would entail. We'd also like to present to you the beautiful and vibrant community gathering space we envision and discuss our proposal in detail.

In general, the garden would be a place where community members who don't have their own gardening space (those living in apartment buildings), or who have too much shade (like so many residents in the Neighborhood) could grow nutritious produce on plots that they would rent for the cost of maintaining the garden each year. In addition to making individual plots available to community members, the garden would serve as a gathering place facilitating positive social interactions. Other possible uses for community gardens include offering adult educational workshops, youth gardening programs, growing food for local food bank, and integration within senior centers.

The garden would be managed by the Sunshine Community Garden Committee and there would be an elected Garden Coordinator to oversee the project in its entirety, a Treasurer to handle the money generated by fundraising and the plot rental fee, and a Garden Steward who would be in charge of general maintenance of the garden and to make sure that all the gardeners are maintaining their individual plots (this means you would no longer need to take care of the site yourself).

Some of the technical issues that would need to be discussed include negotiating a lease, liability insurance, garden rules and regulations, and water access and billing. Of course, all costs for the community garden project would be covered by the SCG Committee and the gardeners.

I've included with this letter some general information about community gardens provided by GardenWorks, including a list of some of the benefits community gardens can bring to a community. The SCG Committee is a well-organized group of interested Neighborhood residents committed to the creation and continued upkeep of a community garden in the Neighborhood.

Thank you for your consideration of our proposal. Please feel free to contact me over the phone, email, or by letter to discuss the community garden project in more detail. My phone number, email address, and mailing address are included below. Thanks again.

Respectfully,

SOURCE: Brian Emerson and Wasatch Community Gardens staff, From Neglected Parcels to Community Gardens: A Handbook

Appendix B – Sample Lease Agreement

This lease is between Property Owner, the owner of the property at 926 Grand Avenue, and the lessees: the Sunshine Community Garden and the Neighborhood Council (their address). The duration of the lease shall be from March 31, 2010 to November 30, 2010 and will be renewed on a yearly basis after November 30, 2010 unless one of the three parties does not approve. There shall be no charge for use of the land for the purpose specified herein.

The lease is for use of land for the purpose of building and operating a community garden. The garden shall be located on the eastern portions of the lot owned by Property Owner. The Property owner shall provide access to and reasonable use of water.

The Sunshine Community Garden will prepare a plan for the garden in consultation with the church showing the location of the beds and submit the plan to the church for approval. In the future, features may be added to the garden such as a decorative fence, compost bins, a pergola/gazebo type structure, a sign, etc. Plans for such improvements will be presented to the church for design and location approval.

Liability insurance will be provided. The Neighborhood Council, and the Sunshine Community Garden and Property Owner will be listed as additional insured parties on the insurance policy. Signing of this agreement constitutes acceptance of the above terms and conditions.

_____ Property Owner	_____ Date
_____ Sunshine Community Garden	_____ Date
_____ The Neighborhood Council	_____ Date

Adapted from the Twin Cities Community Garden Start-Up Guide, www.gardenworksMN.org

Appendix C – Sample Gardener Contract

NAPA COMMUNITY GARDEN ASSOCIATION

2010 Membership Agreement

Member Information

Name _____

Mailing Address _____

Home Phone _____ Work Phone _____

Cell Phone _____ Email _____

Plot #s _____

Plot Rental Terms and Fee

A standard plot is 10' x 10'. The fee for a full year rental is \$50.00. Beginning August 15th, the rental fee is \$25.00 for half a year. You may rent a maximum of two plots per household. Payment of the plot rental fee qualifies you as a member of the Napa Community Garden Association. Your membership and plot rental must be renewed each year.

Payment

Payment should be made by check payable to Napa Community Garden Association.

Community Garden Rules

All members of the community garden are expected to comply with the Community Garden Rules which are attached and made a part of the Membership Agreement. Failure to comply with the Community Garden Rules may result in you becoming ineligible to renew your annual membership.

Waiver of Liability and Assumption of Risk

I understand that neither the Napa Community Garden Association, nor the Napa Valley Lutheran Church as the land owners, are responsible for my actions and that I voluntarily assume any and all risk associated with using the community garden. I agree to hold harmless the Napa Community Garden Association and the Napa Valley Lutheran Church for any liability, damage, loss, or claim that occurs in connection with the use of the community garden by me or by any of my guests.

I understand that my guests and visitors must follow all rules, regulations, terms, and conditions as stated. I will supervise my children at all times when they are in the garden and I am solely responsible for the behavior of my guests.

I have read and understand the Membership Agreement and Napa Community Garden Rules and accept the terms and conditions for my participation in the Napa Community Garden Association.

_____ Dated: _____

Print Name:

Signature

Plot Assignment _____

Amount Paid _____

SOURCE: Napa Community Garden Association

Appendix D – Compost Tea Recipe

Compost tea is an excellent all-purpose fertilizer. Made from aged compost, compost tea contains all of the major and minor nutrients plants require. It gives young plants a starter boost and older plants a pick-me-up. Not only that, it will ward off many common garden diseases and even help cure a few others.

1. Fill a 5-gallon bucket with water to about 3/4 full.
2. Let it sit for 24 hours to allow chlorine to evaporate. (Chlorine kills microorganisms.) An aquarium bubbler can be used to outgas the chlorine.
3. Prepare your tea bag by putting about one gallon of compost in a bag large enough to let the water go through it, but small enough to hold in the compost particles.
4. After the water has rested for 24 hours, place your compost tea bag into the bucket. Stir until the compost is wet and the water turns a rich brown color.
5. Let your tea brew for a bit, but use it within 24 hours. You may need to weigh down the tea bag with a rock or brick.

How to Apply

Drench Method – Apply directly to the soil around your plants at a rate of 1 cup "tea" to your plants monthly.

Sprayer/Watering Can Method – Filter resulting tea through folded cheesecloth. If using a watering can, pour liquid full strength over foliage of plants as you water tea mixture in to the planting area. Apply the strained tea with a standard pump sprayer both to the top and bottom on leaves. Do not throw the solid material away; add it to the soil as mulch around any plant in the garden.

SOURCE: www.harvestwizard.com/2009/04/how_to_make_compost_tea.html

Appendix E – Sample Budget

My Garden Budget

Line Items	Year		
Revenue/Income	2010	2011	2012
Balance from Prior Year			
Fundraiser			
Donations			
Produce Sales			
Fees			
Grants			
Total Revenue/Income			
Expense/Cost	2010	2011	2012
Lease			
Insurance			
Water			
Hoses			
Tools			
Compost			
Seeds			
Fencing			
Pest Control			
Total Expense/Cost			
Net Income (Total Revenue - Total Expense)			

Appendix F – Sample Donation Request Letter

Mr. Joe Carneros
1818 Welch St.
Napa, CA 94558

Dear Mr. Carneros,

We write this letter concerning the development of a community garden for the Welch Street Neighborhood Organization. This year, our organization is developing a community garden to enjoy with our families. In recent years, gardens like ours have benefited their communities by providing healthy, natural food as well as life skills for our children. It's also quite fun!

The Welch Garden Store has generously donated seeds, shovels and gloves for this project. **We are asking our neighbors to contribute \$50** toward the purchase of wood which will be used to build garden boxes and a shed. With a generous 15% discount from Welch Lumber, The total cost of these materials will be \$1,100.

To provide you with further information or answer any questions you might have, I will call you in the next week. If you prefer, feel free to call me at the number below.

Sincerely,

Linda Napa
2020 Welch Street
Garden Organizer
707-777-0707

Appendix G – What to Grow and When

University of California Cooperative Extension - Master Gardeners of Napa County, Sept 2005

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
artichoke												
asparagus												
beans												
beets												
broccoli												
Brussels sprouts												
cabbage												
carrots												
cauliflower												
celery												
chard												
corn												
cucumber												
eggplant												
endive												
fava beans												
garlic												
kale												
kohlrabi												
lettuce												
melon												
onions												
parsnip												
peas												
peppers												
potatoes												
pumpkin												
radish												
rutabaga												
spinach												
squash												
summer squash												
tomatoes												
turnip												



Plant Seeds Directly



Start seeds in greenhouse



Plant Seeds

Appendix H – Sample Ground Rules/Policies

Some conditions may be more relevant to vegetable gardens than to community flower gardens or parks. Pick and choose what best fits your situation.

- I will pay a fee of \$___ to help cover garden expenses.
- I will have something planted in the garden by (date) and keep it planted all summer long.
- If I must abandon my plot for any reason, I will notify the garden leadership.
- I will keep weeds at a minimum and maintain the areas immediately surrounding my plot if any.
- If my plot becomes unkempt, I understand I will be given ___week's notice to clean it up. At that time, it will be re-assigned or tilled in.
- I will keep trash and litter out of the plot, as well as from adjacent pathways and fences.
- I will participate in the fall cleanup of the garden.
- I will plant tall crops where they will not shade neighboring plots.
- I will pick only my own crops unless given permission by another plot user.
- I will not use fertilizers, insecticides or weed repellents that will in any way affect other plots.
- I agree to volunteer hours toward community gardening efforts.(include a list of volunteer tasks which your garden needs).
- I will not bring pets to the garden.
- I understand that neither the garden group nor owners of the land are responsible for my actions.
- I THEREFORE AGREE TO HOLD HARMLESS THE GARDEN GROUP AND OWNERS OF THE LAND FOR ANY LIABILITY, DAMAGE, LOSS OR CLAIM THAT OCCURS IN CONNECTION WITH USE OF THE GARDEN BY ME OR ANY OF MY GUESTS.

Signed _____ Date _____

SOURCE: www.communitygarden.org/learn/starting-a-community-garden.php#new

Appendix I – Sample Gardener Application

Participant application forms can include any of the following information:

Name(s) _____

Address Zip _____

Telephone number:

Day _____

Evening _____

Site Preference:

1. _____

2. _____

3. _____

4. _____

Size of plot. (list choices available)

Season:

- Year round (must be maintained all year)
- Short season (include dates)

Check the appropriate items:

- I am a senior citizen
- I am physically disabled
- This is my first year at this garden
- I would like a garden next to a friend, Name _____
- I have gardened here before and would like plot #___ if available
- I have gardened before at (where?); for how long?

SOURCE: *Napa Community Garden Association*

Appendix J – Non-Toxic, Do-It-Yourself Pesticides

Tobacco Spray

Recipe – One cup of tobacco soaked in one gallon of water for 24 hours will produce a weak tea colored mixture.

Defends against – Caterpillars, aphids, and some worms.

Beware – Avoid peppers, tomatoes, eggplants, or any other varieties in the nightshade family.

Dishwashing Liquid/Vegetable Oil

Recipe – Mix one teaspoon of liquid dishwashing detergent with one cup of vegetable oil. Shake vigorously to emulsify and add to a quart of tap water. Spray directly on pests. Test to avoid plant burn.

Defends against – White flies, spider mites, and aphids

Beware – Spray directly on pests. Test to avoid plant burn.

Liquid Detergent-based Sprays

Rubbing alcohol Mix one teaspoon of liquid dishwashing detergent plus one cup of rubbing alcohol in one quart of water. Test on a few leaves first to make sure no harm is done to sensitive plants. Spray top and bottom sides of leaves; or if plant is small and potted, invert it in a large pan of solution (holding soil ball securely) and gently swish back and forth. Repeat in seven days.

Crushed hot pepper Steep three tablespoons of dry, crushed hot pepper in 1/2 cup hot water (covered) for half an hour. Strain out the particles of peppers and mix solution with one teaspoon liquid detergent and one quart of water.

Apply to plants outdoors. Do not use on windy days. Avoid breathing fumes, which can be irritating to nose and eyes. You can substitute hot Tabasco sauce or Louisiana hot sauce for hot pepper.

Garlic and onions Grind up raw onions or garlic into a puree. Soak in warm water overnight and strain. Liquid can be sprayed on roses, fruit trees, and flowers. Kills aphids.

Garlic and Mineral Oil - Chop 10 to 15 garlic cloves into small pieces to soak in 1 pint mineral oil overnight. Strain and spray oil mixture directly on infestations.

To prevent fungus growth – **Milk and Water** – Fill a spray bottle with half milk and half water. Shake and spray every 3 or 4 days.

To prevent mold growth – **Apple Cider Vinegar** – Spray raw apple cider vinegar on leaves or on soil around plants. This prohibits mildew mold growth.

SOURCES:

www.beyondpesticides.org/alternatives/factsheets/ANT%20CONTROL.pdf

www.ehow.com/how_2033085_keep-garden-pesticide.html

www.eartheasy.com/grow_nat_slug_cntrl.htm

www.ghorganics.com

www.pestcontrolindustry.com/category/natural_pest_control-27.html

www.ehow.com/how_4829013_naturally-rid-aphids.html

www.gopetsamerica.com/garden/pest-control

www.getridofthings.com

www.gardenguides.com

Appendix K – Pest Prevention: Ants, Aphids, Slugs, Snails, and Gophers

Ants

Benefits	Ants actually benefit us by preying on flea and fly larvae, recycling organic matter, and aerating soil.
What Attracts Them	Food and water
Prevention	Outdoor ants are typically not a problem absent food and water.
Natural Repellents	Citrus, mint, cinnamon, cucumber, dried chili pepper, paprika. Add one of the natural repellents to water and sprinkle or spray in the problem area.
Strategies	<ul style="list-style-type: none">▪ Keep it clean. Ant populations may bloom because of the surrounding vegetation or groundcover.▪ Cutting back surrounding vegetation and groundcover to make the area less attractive to ants.▪ Spray diluted liquid soap, citrus-derived cleaner, or vinegar on the problem around.▪ For ant nests, pour boiling or soapy water down the hole of the nest.



Aphids

Benefits

None. These guys breed and spread quickly.

What Attracts Them

New leaf growth.

Prevention

Too much nitrogen is a magnet for aphids

Natural Repellents

Basil, catnip, fennel, chives, mint, banana peels, garlic, parsley, and neem oil, an extract from evergreen plants.

Strategies

- A bit of non-toxic, natural liquid soap in luke-warm water will kill aphids on contact.
- Aphid Tea. Boil a half cup of diced and dried parsley along and two tablespoons of minced garlic in three cups water, reduce the mixture down to two cups. Cool. Put into a 20 gallon sprayer and fill with water then spray directly to problem areas.
- Aphid spray. One tablespoon garlic oil, three drops of non-toxic liquid dish soap in one quart of water.
- Scare them with daylight by placing aluminum foil pieces shiny side up on the ground under your plants.
- Blast plants with a spray of water.
- Encourage ladybugs and soldier beetles.



Snails & Slugs

Benefits

In the garden, none.

What Attracts Them

Warm, dark and damp. Slugs are most active at night, when it's raining, and are most efficient in damp conditions.

Prevention

Keep it clean. They are attracted to extra leaves and weeds, old pots, and other garden debris.

Natural Repellents

Copper, beer, salt, seaweed (because of the salt content)

Strategies

- Go hunting. The best time to find them is first thing in the morning.
- Avoid watering in the evening if you have a slug problem. Water in the morning - the surface soil will be dry by evening.
- Get'em drunk. Slugs are attracted to beer. Set a small amount in a shallow wide jar buried in the soil up to its neck. Slugs will crawl in and drown. Take the jar lid and prop it up with a small stick so rain won't dilute the beer. Leave space for slugs to enter the trap.
- Lava rock. Decorate with lava rock. Slugs will avoid the abrasive texture.
- Surround the area with copper tape
- A last resort, use salt. Sprinkle salt on slugs and they will die quickly.

Gopher Strategies

Gophers eat roots and have been known to work within tunnel systems more than 1,200 square feet. They can create a serious challenge, but these tactics might work for you:

Befriend. Welcome birds – especially owls and hawks – into your garden with bird baths and owl boxes. Also, keep the weeds and growth under control so that the predatory birds can find their prey.

Deflect . Line the bottom of raised beds with 1-1/2” galvanized hardware cloth or chicken wire. If you are lining existing beds, the lining should be under at least two feet of soil.

Flood. Insert a hole into the tunnel and flood it. Remember, the tunnel can be very long so this approach could use a lot of water.

Trap. There are many options – some humane, some not. Contact your local humane society about equipment rentals and instructions.

If you have a serious problem with pests or rodents, contact your local vector control agency.

TIP - Consider installing an owl box to control gophers. For instructions on building and erecting one, visit www.owlcam.com/whatever/boxbuild.htm

SOURCES:

www.beyondpesticides.org/alternatives/factsheets/ANT%20CONTROL.pdf

www.ehow.com/how_2033085_keep-garden-pesticide.html

www.eartheasy.com/grow_nat_slug_cntrl.htm

www.ghorganics.com

www.pestcontrolindustry.com/category/natural_pest_control-27.html

www.ehow.com/how_4829013_naturally-rid-aphids.html

www.gopetsamerica.com/garden/pest-control

www.getridofthings.com

www.gardenguides.com