Yard-Care Survival Manual

By George Weigel
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Owner of Garden House-Calls

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How to plant and care for your own central Pennsylvania yard without driving yourself nuts in the process

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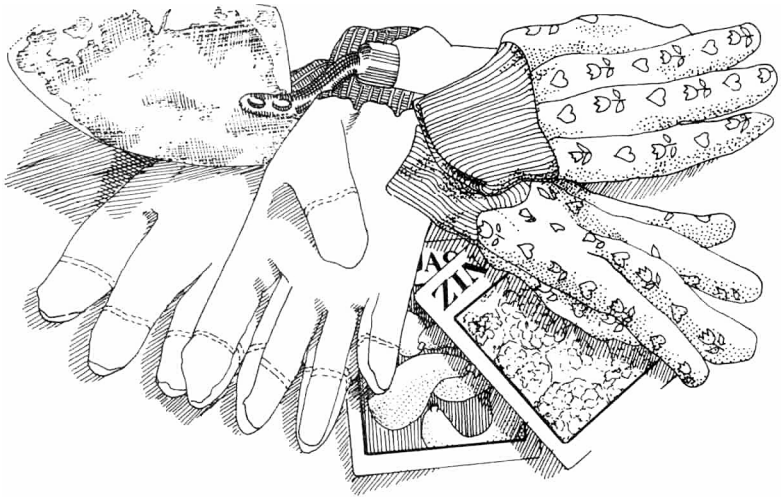
Welcome to gardening in central Pennsylvania

It's not easy taking care of a landscape around here. Our lifestyles are busier than ever, and most people have no training and little experience gardening before they one day find themselves with a home of their own. Add to that the array of special gardening "challenges" we face in this little corner of the earth, such as lousy clay soil, erratic weather swings, periodic droughts, Japanese beetles and all-too-frequent run-ins with marauding rabbits, deer, groundhogs and voles, to name just a few. No wonder so many people hire professionals to do their yard work for them!

Armed with some basic pointers, though, you can do a pretty decent job of maintaining your own landscape without butchering the plants or driving yourself nuts in the process. That's the idea of this booklet -- to give you an instant education in yard care that's specific to our area and climate. So if you don't mind getting your hands a bit dirty, you *can* do it yourself! (If you *do* mind getting your hands dirty, Tip No. 1 is: Wear gloves. I like a brand called Foxgloves.)



First, a few landscaping basics

Before you dig that first hole or whack back that first gargantuan arborvitae, get to know your landscape. This is especially important if you've moved into an existing home. By doing "knee-jerk" relandscaping, you might realize too late that the "ugly" tree you just cut down shaded the patio in the evening or that "overgrown" holly was intentionally left untrimmed to hide the neighbor's cigarette-billboard collection.

Resist the urge to make wholesale changes right away. Correct only the obviously horrific situations up front. Then spend a growing season observing. Pay attention to where the sun comes up and goes down. Look to see where water pools after a rain. Where is it hot and dry vs. damp and shady? How's the soil? Are there windy spots? What existing plants do you like over the course of the whole season? What plants annoy you? Which ones are bug- or disease-riddled or demanding more maintenance than you're willing to give?

The situation is a bit different if you're moving into a new home with a bare landscape. You'll probably be in a hurry to get something planted, but don't rush things at the expense of thoughtful planning.

Good judgment in the beginning will save you lots of expense and maintenance later.

You can always mulch bare areas or plant a few annual flowers until you figure out a longer-term game plan. Problem-prone plants in the wrong spot are at the root of most landscaping nightmares. If you make good choices up front, you won't have to do this again -- at least not with the "bones" of your landscaping the trees and shrubs.

Either way, your answers to the 10 issues on the next page will point you toward a landscape that suits your tastes and proclivity for yard work.

Points to consider when evaluating your landscape

1. How do you use or want to use your yard?

Do you need open space for the kids to play? Do you entertain a lot? Do you want a peaceful retreat? A shed, a vegetable garden, a pool? Are there plants where you want to walk or paths where you'd rather sit? Start with practical needs and carve out a landscape that meets them. Don't just plan for pretty without regard for making the yard usable ("form follows function" in designer-speak).

2. What style of plantings do you like?

Some people like formal, symmetrical gardens that are neatly trimmed. Others prefer a looser look with curved beds and naturalistic plantings or a riot of color such as is found in an English cottage garden. What's right is what matches your taste.

3. What plants and plantings match the character of the house?

A lavender-lined picket fence and clipped boxwoods might be a logical choice for a Colonial-style house. A Victorian-style house might look better with sweeping beds of colorful perennials and annuals. Also consider the surrounding land (wooded? developed?) and other landscaping in the neighborhood. That doesn't mean you have to go that direction. What counts most is what you like. It's your house, so you get the final say. If the judges at Better Homes and Gardens don't like it, let them pay your mortgage.

4. What colors do you like?

One strategy is to match your plants' blooms and foliage to the color scheme of the house and trim. In general, colors fall into two categories -- warm colors (i.e. red, orange, gold, yellow, deep purple) and cool colors (i.e. pink, blue, white and lavender). If your house is red brick, you'll probably be best going with warm plants, such as gold-needled evergreens, shrubs with burgundy foliage and flowers that bloom red, yellow and deep purple. If you've got neutral beige siding and blue shutters, you might be better going with blue-needled evergreens, variegated shrubs and blue, pink and white flowers.

5. Are there views that need to be screened out?

Maybe you want privacy around your deck. Maybe you want a tall screen planting along the side property lines. Maybe you want the entire back yard screened off. And maybe you even want a big chunk of the front yard blocked off from the view of passersby. These would be early plantings to put in place.

6. What views or focal points do you want to keep?

If you have a favorite window to look out, somewhere in that line of sight would be a good place for a specimen tree or shrub. If there is a great view of a mountain or lake from the patio, highlight it by planting plants on either side to frame the view. Don't screen out good views.

7. Be careful not to place plants where they'll block motorists' view.

This not only includes planting big bushes or trees near intersections, it means landscaping so you don't block the view as you pull out of your own driveway.

8. Consider how much maintenance you want to put in.

If you don't like yard work, don't plant fast-growing evergreens that will need a lot of trimming or tea roses that will need a lot of spraying. Get real with your maintenance level and choose plants accordingly.

9. Consider functional factors to zero in on plants.

How important is fragrance? Are there particular animal problems lurking? How important is it that the gardens look good in all four seasons? Do you want to attract (or keep out) birds, butterflies and other wildlife? What difficult areas exist on the lot that will affect plant choice? Do you want to grow any edible plants?

10. Look for samples.

Thumb through a few gardening magazines or books to get a feel for looks you like. Visit a public garden or two. Drive around a few neighborhoods. Snap a few pictures. All will help you focus on your likes and dislikes and maybe turn up an arrangement or two you can "borrow."

Right plant, right spot

Once you know the intricacies of your yard and have a clue about your gardening tastes, the goal is matching the right plants to the right site. This is a lot harder than buying furniture or indoor décor. You can't just buy whatever plants you like and put them where you think they look good. Different plants have different needs. Some of the finickier ones will croak if you don't give them exactly what they want. But even the toughest plants will thrive best in the conditions they prefer.

This means some careful thought and homework. It means seeking plants that don't mind "wet feet" for those damp spots and using sun-loving plants that mature at 4-feet wide for that sunny bed that's 4 feet wide. There are plants for every situation. It's much better to know your situation first and then match plants accordingly than to do what most people do -- go to the garden center the first sunny weekend in May and buy whatever's looking good or on sale. Unless there's something you really, really want to try, it's also better to look for plants suited to your situation than to try and change the situation to suit a plant.

The more you know plants, the easier this will be. But even if you don't know a coneflower from a conehead, help is available. Start with one of the many online plant databases. One of the best is the Missouri Botanic Garden at *www.mobot.org/gardeninghelp/plantfinder/Search.asp*. Here you'll find pictures, descriptions and even ratings by other gardeners on 4,000 plants -- all searchable in a variety of ways.

Another good online resource is Dave's Garden at *http://davesgarden.com/guides/pf*. This site also is searchable and offers unbiased opinions from gardeners as well as sources selling the plants. Or just type in the name of a plant in any search engine, such as *www.google.com*, *www.yahoo.com* or *www.bing.com*, and you'll get a list of possibilities.

The good old-fashioned way is to browse plants in books, such as Michael Dirr's *"Manual of Woody Landscape Plants"* or any reference on flowers by Allan Armitage. When using a book or web site, just be sure the plants are listed as winter-hardy to our zone, which is Zone 6. Anything listed as hardy to Zone 6 or lower should have no trouble with our winter cold.

Garden-center staffers also can help you with specifics if you tell them about your site. Even plant signs and plant tags at least list the basic stats such as height, width and sun exposures.

Hershey Gardens (*www.hersheygardens.org*) is an excellent local resource to see plants in action in a real, live garden as well as to browse for ideas of plants you like.

For detailed profiles of many of my favorite central-Pa. landscape plants (with pictures), visit my web site at *www.GeorgeWeigel.net* and hit the *"Plant-of-the-Week Profiles"* button. The *"Pests and Diseases"* section of this manual list some of the common problems with common plants, and my 24-category garden blog at *http://blog.pennlive.com/gardening* has answers to hundreds of plant-related problems and questions.

Finally, the *"George's Survivor Plants for Central Pa."* list, included with each Garden House-Call, names hundreds of the best plants for our soil and climate. That list filters out the bug- and disease-prone stuff, the drought-wimpy stuff and anything else likely to give you more trouble than it's worth. It also lists the best particular varieties (including the latest introductions); breaks the plants down by category (trees, shrubs, evergreens, perennials, etc.), and includes key factors such as maintenance sizes, bloom times and sun exposures. The current *"George's Survivor Plants for Central Pa."* list is always available for a small charge through my web site at *www.GeorgeWeigel.net*.

Right sizing, too

Pay attention not only to a plant's cultural needs but also its eventual size. Unlike a sofa, a new plant doesn't stay that size for long. Much can go wrong on the spacing front, as if I need to tell you that.

The No. 1 landscaping foul-up is putting too big of a plant in too little of a space. A rhododendron planted 1 foot from a wall will quickly end up looking squished on the back side and fat on the front. An upright yew or an arborvitae planted near a window will quickly obscure the view, unless you constantly prune it. And shrubs planted too closely together not only will waste your money (why buy more than you really need?) but will soon become a work-creating, jumbled, crowded mess.

Here are a couple of important spacing rules of thumb. Don't space by how a plant looks now. Go by the "mature" sizes listed on the plant tag. When planting next to a wall, take the mature width and divide in half. Plant no closer than that distance. (Example: A holly that will get 8 feet around should be planted a minimum of 4 feet away from a wall.)

To determine how close to plant plants to one another, space them the mature width apart. (Example: plant

4-foot-wide spireas no closer than 4 feet apart.) If two plants of differing sizes are being planted next to one another, add the two mature widths together and divide in half to determine the minimum spacing. (Example: A 6-foot-wide viburnum and a 4-foot-wide spirea should be planted no closer than 5 feet apart. 6+4=10. Then 10 divided in half equals 5.)

Planning for height is even easier. If your window sill is 3 feet off the ground and you don't want to obstruct the view, look for plants that top out at 3 feet tall unless you don't mind regular trimming.

In borders and foundation plantings, arrange your plants so that the tallest plants are in the back. In an island bed in which you'll be able to view your plants from all angles, go with the tallest plants toward the middle and the shorter ones around the perimeter.

One last point on spacing. Be very, very careful when planting along property lines. Plants hanging over onto neighbors' properties is the source of numerous neighborly spats, not to mention district-judge cases. To be on the safe side, use the same planting rule as when planting next to walls. Take the mature width of the plant, divide it in half, and plant no closer than that distance from the property line.

Don't call me "dirt"

This "soil" lurks under a lot of yards.

I can't stress enough how important it is to get your soil in good condition before planting. Few people are blessed with decent soil. Most homes built in the last 20 or 30 years have "topsoil" that amounts to little more than several inches of semi-lifeless clay, shale or subsoil leveled out over top of compacted subsoil. This is plant death waiting to happen, and adding more fertilizer isn't going to help.

Plants can't develop a good root system in poor, compacted soil. In dry years, that leaves your under-rooted plants more susceptible to drought injury and death. In wet periods, water can't drain fast enough through the compacted soil, causing it back up and rot out plant roots. Either way, you're lowering your odds of success.

Good soil is a living, breathing organism that's far more than something to keep plants from falling over. Think of it as a microscopic factory of life that supplies nutrients, moisture, oxygen and energy that plants absolutely need to live and thrive. Unless you've lucked out and moved into a place where gardeners lived before, you'll need to improve the underlying structure of the soil to add nutrients and air pockets that allow the roots to "breathe."

The best way to do that is by working 2 to 3 inches of compost, mushroom soil, chopped leaves, rotted cow manure and/or similar organic matter into at least the top 10 or 12 inches of the existing soil. Fail to do that and you might as well plant in the driveway. That works out to about 20 to 25 percent "good stuff" worked into the existing stuff.

It's best to prepare whole beds rather than digging and improving individual holes for each plant. When you improve a whole bed, the soil is uniform throughout, and it'll give plant roots free reign to spread unimpeded in all directions. When you're done, you'll have slightly raised beds that taper down to ground level (or slightly below) around the edges.

If you're only planting a single tree or large shrub in a hole instead of planting a bed, the game plan is different. In this case, add no more than 10 percent organic matter. Why? If you greatly improve the soil in a small hole, tree and shrub roots will grow out until they hit the unimproved "real-world" soil, then turn back inward where the going is easier. Water also can back up into the improved hole when it hits the surrounding compacted soil that drains much slower. The effect is a lot like planting into a buried pot. If you must plant in a single hole, at least make the hole three or more times as wide as the root ball.

Four ways to check your "soil"

So how can you tell what kind of shape your alleged soil is in? Here are four tests you can do:

1. Nutrition test

Penn State do-it-yourself test kits are available at county Extension offices and most garden centers for about $10. You dig up and mix your own soil sample, dry it overnight and mail it in the provided bags to Penn State's soil-test lab. (More information and online kits at *http://www.aasl.psu.edu/SSFT.HTM*.)

The results will tell you where your soil stands on four key plant nutrients and what you can add at what rates to maximize results. The report also will tell you the soil's acidity level and whether you need to add sulfur or sulfur compounds (to make it more acidy) or lime (to make it more alkaline).

It's best to know these needs before planting because soil amendments are more effective when worked into the soil than when scratched into the surface later.

Penn State mail-in soil test kit

2. Drainage test

Before planting, dig a hole about as big as one of the root balls of the plants you plan to plant. Fill it with water and give it 24 hours to drain. Then fill it again, and watch to see how many inches it drains per hour.

If it's not going down by at least 1 inch per hour, you've got some serious "un-compacting" to do by adding organic matter or building raised beds.

3. Soil-texture test

Dig up a tablespoon or so of soil and add enough water that you can roll it into a ball. If you can't form a ball, the soil is sandy.

Next, squeeze the ball between your thumb and index finger to make a ribbon. The longer the ribbon goes before cracking, the more clay you've got. Less than 2 inches is a pretty good composition. More than 2 inches means the soil is clayish.

The feel alone can also give you a clue… sand feels gritty, clay feels sticky, and silt feels velvety slick.

4. Jar test

Dig 2 to 3 cups of soil from 6 to 8 inches deep in your planting bed. Let it dry on newspaper for 24 hours. Use a sieve or old metal colander to sift rocks, roots and other debris out of the soil. Crush lumps of soil to sift them through.

Pour 2 cups of the sifted soil into a quart Mason jar or clean mayonnaise jar and add 1 tablespoon of powdered detergent. Then fill the jar with water, seal and shake vigorously for 3 minutes.

After 1 hour, the biggest sand particles will settle out into a bottom layer. After 2 hours, the slightly smaller silt particles will settle out into a second layer. And after 24 hours, the smallest clay particles will settle out into a third layer.

Measure the thickness of each layer and the total depth. To figure the percentage of each layer, divide that layer's thickness by the total depth. (Example: If all three layers total 3 inches and 2 inches of that is the clay layer, then about 66 percent of your soil is clay.)

Ideally, all three layers will be about the same. When any of the three exceed 60 percent, that type is becoming undesirably dominant, and amending with organic matter is advised.


Jar test checks quality of soil

Time to make your bed

Now we're ready for the specifics of "bed prep."

If you're starting with turfgrass, use a hose or rope to mark the boundaries of the new bed. Then spray-paint to make a line on the grass. Use an edger, spade or ice-chopper to cut through the turf along the lines. (Be sure there are no buried utility lines anywhere nearby before doing any digging. Call Pennsylvania One-Call at 811 or 1-800-242-1776 to have lines located at no charge.)

Option 1 is to manually strip all of the turf using a spade to cut under and lift up a piece at a time. It's the most work but the best option if the soil is poor. Once the turf is off, improve the soil as described in the previous section. Inside tip: Use the stripped-off patches of turf to replace bare or thin spots in the lawn. This is free sod! At the very least, compost it.

Option 2 is to use Round-Up (or a similar herbicide with glyphosate) to kill the turf. (Organic gardeners can use vinegar or a non-synthetic herbicide.) Be careful not to let the spray drift onto anything else because Round-Up and vinegar will kill most anything green. Wait 10-14 days and you can plant right into the dead turf if the soil underneath is in good shape (unlikely).

Assuming the soil is the usual compacted mess, lift the turf after Roundup browns it out and improve the soil as described in the previous section. You'll find the turf comes up easier when the roots are dead.

Dead turf also can be composted, or you can flip the clods over and use it as mulch on top of the ground after you improve it. (Add an inch or two of wood or bark mulch over top of the flipped-over dead clods.)

You can also till the dead turf into the soil. It'll eventually break down and add organic matter. Since Round-up killed the roots, you won't have to worry about unwanted grass resprouting later.

Inside tip: Remove a skinny strip of turf along your spray-painted line first. Whether you're spraying Round-Up or tilling, it'll separate the "keeper grass" from the future garden and make your work easier.

One other way to kill off turfgrass. If you plant far enough ahead, you can smother the grass with black plastic left in place for at least four to six weeks.

Option 3 is the least-work method and also avoids the use of herbicides. However, it's useful only when you're starting with pretty good native soil.

First remove a foot-wide strip of turf around the perimeter of your new bed. Then lay whole sections of newspaper and 2 to 3 inches of mulch directly over the remaining turf. The newspaper and mulch will smother the turf and let it compost in place.

This method makes most sense when you're mainly planting larger trees and shrubs as opposed to a lot of smaller flowers. Ideally, allow six months of smothering time before planting.

When to prepare beds

Removing turf and digging new beds can be done anytime the ground isn't frozen or wet enough that you'll ruin the soil structure by squishing it. If it's sticky or muddy, don't dig. You'll force the air spaces out of the soil and turn it into something akin to concrete when it dries.

One of the best times of year to dig a new bed is fall. The ground is typically warm and fairly dry then, plus it's a more pleasant time to be out there working than in a 95-degree heat wave. Most plants do very well when planted September through the end of October, so it's a good time to get the whole project done at once. If you dig but don't plant until spring, that's fine. Just cover the ground with 2 to 3 inches of wood or bark mulch to prevent winter erosion.

Spring is another good time to prepare a new bed. However, the soil might be a little colder to work with, and you'll have to pay attention that it's dried out enough from snow melt and spring rains to be workable.

Mid-summer might not be an ideal time to plant because of the heat and usual dry conditions, but that doesn't mean it's not a great time to dig. If you don't mind the heat, do your digging and soil work to get the beds ready. Add your mulch, and walk away until the heat breaks in September. Then come back and plant later into the already-mulched bed.

Planting times

That September/October time frame is one of two ideal planting windows here in central Pennsylvania. The other excellent time is early to mid-spring from right after the ground thaws (typically late March) through May.

Plants grown in containers really can be planted anytime from early spring through October and maybe even a bit beyond if fall turns out to be long and warm. However, it's more of a shock to a plant when it's transplanted in very hot weather, plus you'll have to be particularly careful about watering summer-planted plants. Those first six weeks after planting are critical for consistently damp soil.

If you do plant in summer, at least try to do it during a cooler spell, during cloudy weather or ideally, right before a rain. Evening planting also is better than planting late morning through afternoon, when a relocated plant will have to face the most brutal heat and sun right off the bat. Even then, plants transplanted into good soil and kept watered usually will bounce back from wilting caused by heat shock.

Most plants do equally well whether transplanted in spring or fall. The exception is borderline-hardy plants that would rather not have to face a cold winter until their roots are more fully established. These would include camellia, crape myrtle, nandina, cherry laurel, osmanthus, cedar and Japanese plum yew or any Zone 7 plant that you're pushing the envelope with. These might do fine fall-planted, but you'll gain at least a small edge by planting the least cold-hardy stuff in spring.

A word on fertilizer...

Another issue that comes up at planting time is whether to add fertilizer. You'll run into a variety of transplant fertilizers and "root-starter" products. Most of the time, your new plants will do fine with just good-quality soil and plain-old water.

Worry less about fertilizer and more about the Big Four:

1.) improving the soil quality and texture
2.) getting the right plant in the right spot
3.) planting correctly
4.) keeping the plants consistently damp but not soggy until the roots establish

By all means, work in any amendments and fertilizers suggested by a soil test. But once you do that, there's no need to routinely add more fertilizer to every plant you plant. Those root-boosting fertilizers probably won't do any harm, but they're generally not needed.

One possible exception is "mycorrhizal fungi." These aren't fertilizers at all but granular products containing naturally occurring fungi that act as little "root helpers." These fungi colonize plant roots and hand off moisture and nutrients that give developing roots a boost.

There's some research showing mycorrhizal products may help plants establish faster. Again, you don't need to buy these products or else your plants will die, but at least there's some evidence of a slight edge. Among mycorrhiza-containing brands you might encounter: Myke, Mycor Tree Saver, SoilMoist Transplant Formula and Espoma Bio-Tone Starter Plus. Check the labels for the ingredient "mycorrhizae" or "mycorrhizal fungi."

How to plant

There's more to planting than sticking your new plant in the ground with the root end down. "Operator error" kills and maims many a plant, especially with too-deep planting, over-mulching and similar miscues. It's not rocket science. But unless you've learned a few important no-no's and yes-yes's, you're winging it and hoping for the best.

Here's a look at how to plant what:

Free circling, matted roots of container-grown plants.

Trees and shrubs.

If you're planting a tree or shrub in a hole as opposed to in a prepared bed, dig a hole 3 to 5 times as wide as the root ball but no deeper than the root ball's height. The goal is to plant it on solid ground so the soil doesn't settle underneath and cause it to sink. That can lead to root rotting. Improve the hole's soil with no more than 10 percent organic matter as described in the bed-prep section. No lining the bottom of the hole with stone or gravel.

For container-grown plants (including fiber pots), first remove the plant from the pot. You may need to beat on the sides a bit to loosen it or you may need to cut the pot apart. Next, fray out the roots, especially if they are circling. This is very important to encourage the roots to spread out in the ground! If you can't free the roots by gently pulling them out, make three or four vertical cuts in the root ball to break up the tight mat.

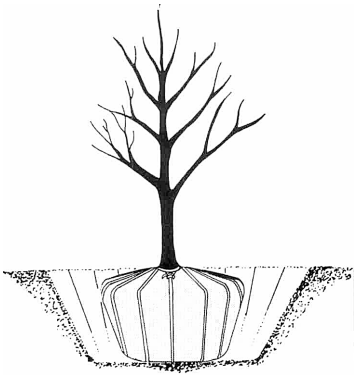
For balled-and-burlapped plants, set the plant in the hole and then cut off and remove all of the burlap or as much as is humanly possible without causing major root damage. Also cut apart and remove wire baskets and remove any rope or strings around the trunk or roots. All of these things are intended to keep the root ball intact during moving and planting. Once the plant is in the hole, burlap, wire and strings are objects that impede root growth. Your goal is to encourage those roots to get out into the new soil as quickly and as easily as possible.

A third way you might find trees and shrubs is "bare root." These are young plants that have been dug when dormant and shipped without soil. These can only be planted in late winter to very early spring (primarily mid-March to early April) before new growth occurs. The roots should be kept moist at all times in packing material, such as damp mulch or peat moss. Soak the roots in a bucket of water for about two hours before planting. Make a mound of soil under the trunk and spread the roots out in the hole before backfilling.

When setting container-grown and balled-and-burlapped plants in the planting hole, make sure they are on solid ground and sitting an inch or two above grade. This helps prevent the plant from ending up too deep from soil settling.

Definitely do not plant below grade, thinking that the plant will be more stable or grow deeper roots that way. (Clematis is the exception.) Planting too deeply is one of the leading causes of tree and shrub death. Too-deep roots suffocate, while bark underground may rot. Both are potentially fatal. Especially in our typically clayish soils in central Pennsylvania, it's much better to plant a little on the high side and cover the root ball with mulch.

As you set the plant, turn it so that the "good" side is facing the way you want it. Look at the plant from all angles to make sure it's in the ground straight. Backfill halfway with soil, tamp, recheck for straightness, water, then finish backfilling and tamp. Cover the ground with 2 to 3 inches of wood or bark mulch and then water again.



Trees and shrubs should be planted on solid ground and about 1 to 2 inches *above* grade.

After planting, keep the new plant consistently damp. See the watering section of this booklet for more details on this.

Staking is not necessary unless you've planted a rather large tree with a comparatively small root ball or if you've planted on a slope or in a windy area. Tree roots and trunks actually develop stronger and faster when the top growth is allowed to sway a bit in the wind.

You don't want the tree to lean or fall over, however. So if you fit into the above categories or find that a tree

begins leaning after transplanting, use a wide band or strap and two or three stakes to secure the tree at chest or shoulder level. Don't use wire or rope, which can cut into the bark. Tie securely but not so tight that the trunk can't move at all.

After no more than one year, the staking should come off. The roots should be secure by then.

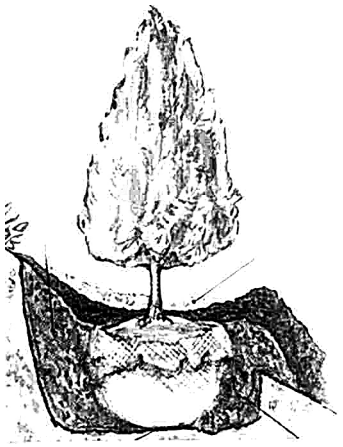
***Warning**: Sometimes new trees and shrubs are already buried too deeply in their pots or burlap bags. Check for that by looking for a slight flare where the trunk turns into the roots. If that flare is under the soil, remove the excess and plant so the flare is just slightly above grade.*

A tree's root flare should be just above grade. If a tree you're planting looks as wide at the base as it does up a bit higher on the trunk similar to a telephone pole the root flare is no doubt just below, buried in the soil.

A tree's flare (at the base of the trunk) should be visible above ground. **Photo by Eric Vorodi**

Another planting curveball is planting on a slope. The trick there is to create a level platform or terrace for each new tree or shrub. Loosen the soil and create a nearly level bed in the area you plan to plant. Then taper the bed down in the front.

This little platform will catch rainwater and allow it to soak into the roots instead of running straight down the hill as happens if you replace the slope at a continuous angle. This makes a huge difference in plant survival.



Planting platforms or terraces help slow runoff and improve transplant success on slopes.

Annual and perennial flowers.

Most of these plants will perform best if you work 2 to 3 inches of organic matter into the top foot of your planting bed. Fertilize according to your soil-test report. Then use a trowel to dig individual holes, setting each plant in the ground at the same level as it was in the pot.

Container-grown perennials sometimes have tightly matted root balls, so these roots should be frayed out just like root-bound trees and shrubs. Try not to damage roots any more than necessary to free them, but it's better to slice them vertically at three or four places than to plant a tightly matted root ball. Mulch immediately after planting. (See the section on mulching for more on what kind of mulch to use and how much to apply.)

Perennials are best planted in spring and fall, although they can be planted throughout the summer if kept watered. Most annuals are best planted the second week of May and after in central Pennsylvania. Mother's Day is a good reminder. The all-time latest killing frost date at Harrisburg International Airport is May 11, although outlying areas have had frost as late as Memorial Day.

Pansies are best planted in fall because they usually overwinter and bloom again through spring before being replaced by warm-weather annuals (assuming rabbits don't eat them). They can be planted in early spring, too. Fairly cold-tolerant dianthus, snapdragons and dusty millers can be planted in mid to late April.

Most annual flowers can be planted 10 to 12 inches apart. Some of the bigger, bushier varieties such as zinnias, cosmos and cleome can go 15 to 18 inches apart, while some of the most prolific spreaders such as verbena and the 'Wave' petunias can be planted 2 feet apart. Plant your annuals closer if you're less patient and want them to fill in faster.

Most perennials can be planted 24 to 30 inches apart, although some of the bigger ones such as Russian sage, hardy hibiscus, ornamental grasses and large-leafed hosta can go 36 or more inches apart. Plant tags will help guide you. Again, if you're after a faster, fuller look, you can space all but the biggest perennials as close as 18 inches apart.

Bonus tip: When planting flowers, it's a good idea to space the pots or transplants out on the ground before planting them. That'll give you a chance to make minor adjustments without having to rearrange after planting.

Spring bulbs.

Tulips, daffodils, hyacinths and other spring-flowering bulbs are best planted here from late September through mid-November. They can be planted into December so long as the ground isn't frozen.

Improve the soil and loosen it well to about a foot deep. Fertilize according to your soil-test report. Then you have two options: 1.) Set the bulbs on top of the ground where you want to plant them, then go back and plant

them one by one, or 2.) Remove the soil to the desired depth, set the bulbs in place and then cover them all at once with the saved soil.

Either way, a rule of thumb is to plant bulbs two-and-a-half to three times as deep as the bulb's width. A bulb that's 2 inches wide, for example, would be planted with its base 5 to 6 inches below the soil surface. Include your mulch when calculating depth.

If you've had trouble with rodents eating your bulbs, try covering the soil with a sheet of chicken wire and then mulching over top of it. Or go with daffodils, fritillaria, Siberian squill, grape hyacinths , glory-of-the-snow or alliums bulbs that rodents don't like.

Small bulbs such as crocuses, snowdrops and Siberian squill can be planted 2 to 4 inches apart. Bigger bulbs such as daffodils, tulips and hyacinths can be planted 6 to 10 inches apart.

Vegetables.

Wide rows (4 feet is ideal) and raised beds work best for veggies. You can also make your beds into interesting geometric shapes instead of squared-off boxes. Mix herbs and flowers for improved looks and to attract beneficial insects that will eat the "bad" garden bugs.

Improve the soil every fall with compost or other organic matter so you're ready to go first thing in the spring.

Cabbage, broccoli, lettuce, spinach, carrots, onions, leeks, cauliflower and peas are cool-season crops that can go in the ground in late March through early April. Wait until the second week of May to plant tomatoes, peppers, beans, eggplant, melons and cucumbers.

Mulching

Mulch is any material that goes on top of your garden beds. It's important for a variety of reasons. It holds in soil moisture. It helps choke off weeds. It moderates changes in soil temperatures. And it keeps soil-borne pathogens from splashing onto leaves, thereby preventing disease. Organic mulch even adds humus and nutrients to the soil as it breaks down.

There are many types of mulches, and all have pros and cons. In most cases, organic mulches such as shredded hardwood, bark mini-nuggets, bark mulch or ground licorice roots work best in home landscaping. Inorganic mulches such as polyester weed fabric, black plastic and stone have their place, too. However, be aware that in garden beds, weed fabrics and plastic may impede rain water from soaking into the ground and may encourage plant roots to grow closer to the surface. Also, if wood mulch is used on top of weed fabric, weeds can germinate in this organic matter as the wood mulch breaks down.

Shredded hardwood mulch (sometimes called "tanbark") is by far the most common mulch used in central Pennsylvania. It's readily available, good at stopping weeds and relatively inexpensive, but recent studies have found it's also the best growing medium for artillery or "shotgun" fungus. This fungus is an organism that sometimes grows in wood mulch and shoots little tarry, hard-to-remove black dots on siding and other light surfaces. It's especially dreaded when infected mulch is used around white vinyl fencing, in the foundation beds next to light-colored siding and even in driveway beds where the tarry fungal spores shoot and stick on cars. New research is finding that wood mulch mixed in a 60-40 ratio with mushroom compost virtually eliminates artillery fungus. But this mix can break down faster and isn't readily available (at least not yet).

Bark mulch is more expensive (it's more often sold in bags than bulk), but it's less prone to artillery fungus. It's also less prone to matting than shredded hardwood and is ground finely enough that it looks more natural than bark chunks. If you don't mind lugging the bags around, this is probably the best mulch for most settings or at least those settings in which you don't want to risk artillery-fungus problem. Tests at Penn State found that cedar and cypress mulch also are good for discouraging artillery fungus.

Pine bark nuggets and mini-nuggets don't break down as fast as the finer-ground pine bark mulch, but they sometimes blow around in the wind. Some people also don't think they look very natural.

Shredded leaves either by themselves or mixed with chipped branches make a good, nutritious, well-draining mulch, but they break down faster than either shredded hardwood or bark mulches. They also aren't as good at smothering weeds, unless you use a thick layer and add more regularly.

Pine needles make a great mulch, especially around acid-loving plants, but like leaves, you have to pile them on thickly enough to stop weeds. These also are expensive and hard to find in our area.

You might also run across cocoa-shell mulch, but other than having a nice chocolately fragrance at first, it's not a good choice. It's expensive, tends to blow around when dry, is potentially harmful to dogs, and often rots as it breaks down.

Following is a closer look at mulching by plant type and situation:

Trees and shrubs.

Two or 3 inches of organic mulch is enough. Use pine bark mulch, pine bark mini-nuggets, pine-bark nuggets, shredded hardwood, cedar or cypress mulch or a blend of shredded leaves and chipped wood. Go heavier than 4 inches and you'll need a heavy rain just to wet the mulch before it ever gets into the ground. Too much mulch also interferes with the exchange of oxygen between soil and air. Never let mulch touch stems or trunks because it encourages rot. Keep mulch back at least a few inches.

Once you have an initial layer of mulch down, cultivate it if it mats and add only a light topping each year or two as needed. (Shredded hardwood is particularly notorious for matting.) Don't keep piling on 3 or 4 inches of new mulch every year if what you already have hasn't completely decomposed.

How much mulch?

To figure how much bulk mulch you'll need, first measure the length and width of the area to be covered. Multiply the length by the width to get total square feet.

Next, multiply that by how many inches of mulch you plan to put down. Finally, divide that total by 324 to arrive at the number of cubic yards of mulch to use. Most bulk suppliers sell by the cubic yard.

Example: You want to add 2 inches of mulch to a bed that's 8 feet wide by 20 feet long. Multiply 8 x 20 to get 160 square feet, then multiply by 2 inches. The total is 320. Divide that by 324 and you get about 1 cubic yard.

In bags, mulch usually comes in either 2 or 3 cubic-foot bags.

A 2-cubic-foot bag covers about 12 square feet of bed at 2 inches and about 8 square feet at 3 inches.

A 3-cubic-foot bag covers about 18 square feet of bed at 2 inches and about 12 square feet at 3 inches.

Annuals and perennials.

An inch or two is usually enough mulch for these. Again, keep it away from stems, cultivate it if it becomes packed down, and don't overdo it.

A blend of shredded leaves, dried grass clippings and chipped or shredded wood makes a superb homemade flower mulch. Otherwise, bark mulch is next best, followed by shredded hardwood.

On banks and in windy areas.

These are two sites where shredded hardwood makes the most sense. Shredded wood pieces knit together and stay in place better, so long as you don't let it become so matted that water runs right off. Bigger bark chips and cocoa-bean mulch are the worst choices on banks. They'll slide right down.

Pathways and foundation strips.

This is one of only two areas where weed fabric or plastic mulch makes good sense. (The other is between vegetable-garden rows). Put a layer of fabric or plastic down on the ground and cover with pea gravel, stone dust or similar small stone that matches the house or surrounding hardscaping. If you cover fabrics or plastic with organic mulch, weeds will sprout on top as the mulch breaks down. It's still likely that you'll get a few weeds over time as leaves break down among the stone. But at least these will be easy to pull or spray.

Besides choking out weeds in paths, a 1 to 2-foot stone-covered, weed-fabric mulch around the house foundation is a good idea for several reasons. It keeps potentially termite- and bug-infested wood out of immediate contact with the house. It reduces algae on the siding by forcing plants a little farther away from the wall. And it's cleaner by eliminating decaying mulch or bare soil from splashing onto the walls.

In any of your beds... there's no need to remove or dig previous year's mulch into the ground before adding new mulch. Earthworms and other soil organisms will break down this material for you, and worms will pull some of it into the ground. (They're like little soil-building machines!) In fact, regular tilling discourages the buildup of healthy populations of earthworms, so limit tilling to just the original bed prep.

Besides the artillery fungus mentioned earlier, you might find two other types of fungi growing in your mulch. One looks like an orange/yellow blob that eventually turns black and seems to contain a dry, black powder when you kick it. This is "slime mold" or, as it's nicknamed, the "dog vomit fungus" because that's what it looks like. This fungus is harmless to people, pets and plants and can either be ignored or cultivated into the mulch if it bothers you.

The other fungus is called "birds nest fungus" because it grows in tiny half-shells that contain round spores the size of pinheads. It gets its name because it looks like little bird nests with eggs in them. This also is a harmless fungus that can be ignored or cultivated into the mulch.

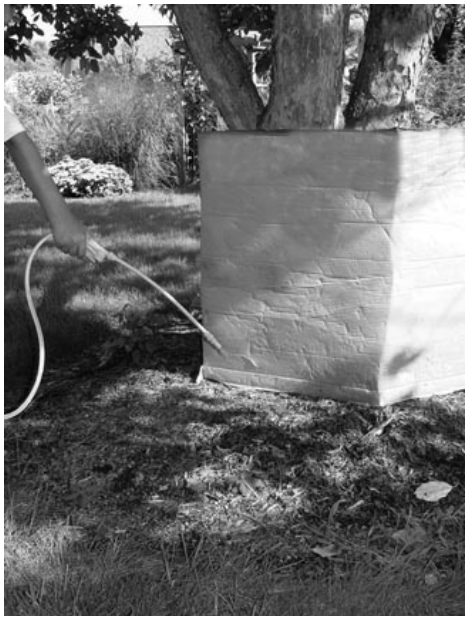
Weed control

Weeds are one of the most annoying facets of gardening. It's much easier to prevent them than to try to eradicate them after they've been allowed to get out of control -- especially in a bed with existing plants.

One truism about weeds is that they'll always eventually fill any area where there's bare dirt. Weeds are nature's way of "healing" itself so rain doesn't wash away unprotected, unsecured soil. Your first line of defense, then, is to avoid bare dirt on your property.

If you follow proper plant spacing, eventually your landscape plants will grow to touch one another and fill all of the space before weeds can get to it. While your plants are maturing, keep the area in between mulched as described above. Ditto for any area where you don't have plants, lawn, decking or sidewalks.

Another way to prevent weeds is to apply an annual or twice-a-year treatment of a weed preventer such as Preen, Treflan or organic corn gluten meal. These are granular products that keep most weed seeds from germinating while not harming existing plants. Weed preventers can be spread or broadcast over flower and shrub beds to stop each year's weed crop before it gets started. It's best applied in late March around the time forsythia blooms and again 8 to 10 weeks later to stop summer-germinating weeds. Be careful to read the label on weed-prevention products before using because there are some plants that are sensitive to the chemicals in them.



Cardboard can be used as a barrier to keep herbicide drift off trees and other plants.

The down side of weed preventers is that they do nothing to control weeds that already are growing or perennial weeds that come up each year from underground stems as opposed to seeds. These weeds include some of our worst problems such as wild geraniums, wild chrysanthemums, nutsedge and Canada thistle.

Once a weed is up -- whether it's an annual one or a perennial one -- you have two options.

Option 1 is to pull it or dig it. Annual weeds come up pretty easily, especially when they're young, but you'll have to be more vigilant when it comes to perennials. If you don't get the entire perennial weed roots and all it's likely to sprout new growth from the remaining piece. You'll probably need a weeding tool or screwdriver to deal with these weeds. Either way, try to get rid of weeds when they're young and definitely before they go to seed.

Option 2 is to use a weed-killer. Some weed-killers are specific enough that they kill only certain types of weeds, such as broad-leafed ones or grassy ones. These are especially helpful when you're trying to kill broad-leafed weeds such as chickweed or dandelions in the lawn or when trying to kill grassy weeds that have worked their way into a groundcover bed.

The other type of weed-killer is "non-selective," so named because these will kill just about anything green. Round-up is the best known of these. Its active ingredient in glyphosate, a chemical that works its way down into roots but also is supposedly quick to break down after it has done its job. Non-selective weed-killers are most useful for clearing big patches of weeds or for killing off weeds and lawn before planting a new garden.

If you use these to kill weeds that are growing among landscape plants, be careful not to let the spray drift onto the plant foliage. You can protect plants either by shielding them with cardboard or plastic as you spray nearby weeds, or you can use a sponge or brush to apply the weed-killer to the weeds instead of spraying it. As long as glyphosate doesn't land on plant foliage, it won't kill it; it doesn't work down into the roots of a weed and then move over in the soil to kill nearby plant roots.

Round-up also comes in a "Sure Shot" formulation that comes out in a foamy jet spray. That reduces drift and lets you see if you accidentally spray it on a landscape plant. If that happens, wash off the spray with water before the chemical has a chance to work.

Other types of non-selective weed-killers not only kill most anything green but persist in the ground for up to a year. These are intended primarily for areas where you don't want anything to grow. If long-term non-growth is your goal, though, consider weed fabric topped by stone.

Watering

Both over- and under-watering can kill plants. So it's important to know a few watering basics to avoid either extreme. Improving the soil was one of your best moves. In rainy weather, loose soil lets excess water drain out before it rots roots. In dry weather, the organic matter you've added acts like little sponges in holding moisture.

Watering is tricky when it comes to general rules because different soils and weather require different amounts of water. The best guide is to water as you usually do for the length of time you usually do, then give the water a chance to soak in. Then check the soil to see how wet it is underneath. Use a long stick or probe inserted next to your plants. Even poking your finger a few inches down into the soil is a reliable, low-tech test.

Wetting only the mulch or top inch of the soil will do your plants little good. Shallow waterings may, in fact, do more harm than good by encouraging roots to come up to the surface in search of what little moisture exists. In annual and perennial beds, the probe test should show that the soil is moist down to at least 6 or 8 inches. For trees and shrubs, the soil should be damp down to just below the root ball -- in other words, maybe a foot or more.

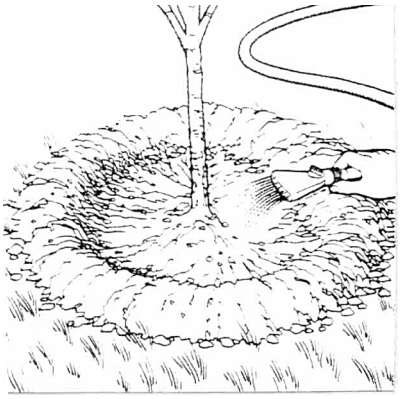
The whole idea of watering is to make sure the soil is damp not only in the root ball itself but in the soil beside and below the roots. That will encourage the roots to grow out and down. Most people under-estimate how much water it takes to dampen the soil that deeply. The probe test will tell you if you're underdoing it and help you zero in on exactly how long you should be watering at the rate you apply it in your own yard. (If you're overdoing it, you'll see puddles that aren't soaking in within a few minutes.)

Once you've got this down, you can regulate watering time very accurately. Or you can install a drip-irrigation system and even program it to come on at the right intervals and length of time.

Keep in mind that weather also influences how much water your plants need. Plants use far more water in hot, dry, windy conditions than they do in cool, cloudy weather.

For new trees, shrubs and perennials, count on giving them a good, deep soaking about twice a week for the first six weeks or so (if rain doesn't do the job for you). Then weekly waterings should be fine for the rest of that first growing season.

Making a ridge around the mulch perimeter will help guide water into the root zone instead of allowing it to run off. After trees, shrubs and perennials are established, many can go weeks without water in all but the hottest weather. Signs of not enough water are wilting leaves -- especially ones that don't recover overnight and browning around the leaf edges. If your leaves are starting to do that, the best time to water was yesterday. Or the day before.



Making a basin with your mulch will help direct water to the root zone.

New annuals and vegetables have shallower roots and need water more often. You may need to water these every two to three days for the first few weeks and then every third or fourth day in hot, dry, summer weather.

Mulch helps retain soil moisture in all of these cases. Whenever in doubt about whether it's time to water, check the soil with another handy-dandy probe test (i.e. your finger). If it's dry in the root zone, it's time to water.

In droughts, don't try to water your entire garden in one fell swoop, unless it's small. It's easier to break up the job by doing a deep soaking in one area one day, then giving the other areas their due on other days.

Your first priority in a drought should go to newly planted trees and shrubs. Their root systems are still limited, and besides, these are the most expensive plants that you don't want to lose. Hanging baskets and container plants also should get high priority because they can die within a matter of days if not watered. Also high on the list should be any sentimental favorite or expensive specimen plants in the yard.

After those plants are watered, take care of established shallow-rooted trees and shrubs, such as azaleas, rhododendrons, dogwoods, hollies and blueberries. Then water newly planted perennials (especially any showing signs of wilting), and then take care of the annual flowers and vegetables.

Established perennials and established trees and shrubs are next on the priority list. And at the absolute bottom of the list is the thing that so many people put at the top -- the lawn. Lawns are "smart" enough to go dormant and brown out in droughts. They can go 6 weeks or more in this dormant state with no lasting damage. One good rain and otherwise healthy grass will green up again. The only exception is lawns that have been seeded or sodded in the past year. Give them high priority because the roots have not established yet.

Transplanting

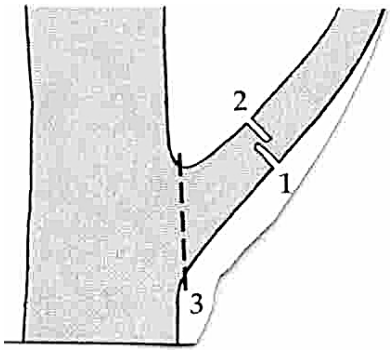
If you realize you've got plants in the wrong place, the sooner you move them, the better. It's much harder to move plants with large, well established root systems, plus the transplant-survival odds also go down. The best times for transplanting are the same as for planting -- end of March through May and then again after Labor Day through October.

To move a tree, shrub or evergreen, first dig the new hole and improve the soil in the new site. Water the plant well a day or two before the move. If the plant has leaves or needles at moving time, slow moisture loss by spraying them with an antidesiccant such as Wilt-Pruf or Safer No Wilt Plant Shield. When you're ready to move, get as much of the rootball as humanly possible when digging the plant. Dig down, in and around the perimeter, circling until the plant is loosened. Then wrap the rootball in burlap, get the plant in its new site ASAP, water well and mulch. Treat the plant as a new plant again.

Perennials are even easier. Have the new bed ready and water them ahead of time as with woody plants. Then dig the entire clump and replant at the same depth. For big clumps, this is also a good time to split them to create two or more transplants from each mother plant. Water well and treat as new plants until the roots are established.

All transplantings are best done in the evening or on cloudy days.

Pruning



Prune larger branches by making an undercut (1) almost halfway through the branch a few inches out from its attachment to the trunk. Then move out a little further and cut from the top (2) until the two cuts meet and the branch falls off. Finally, cut off the stub along the outer edge of the branch collar (the raised ridge where the branch attaches).

Pruning is the yard job that gardeners fear most. Many people are leery about cutting into a healthy plant, thinking they'll harm it or even kill it if they don't do the deed right. But pruning is an important and necessary task for most woody ornamental plants.

It removes dead or diseased tissue to keep plants healthy. It can open up overly dense growth and improve air flow, thereby discouraging disease and reducing the chances of damage in windstorms. It can rejuvenate old plants by spurring new growth that flowers better. And it can improve the looks of plants and correct a lot of potential problems that trace back to siting mistakes, including keeping too-big plants under control and keeping overgrown branches away from windows, driveways and intersections.

The type of pruning you do depends on the reason for doing it. Sometimes, nothing more is needed than cleaning out dead, diseased, bug-injured or broken branches, such as at the end of winter or following a windstorm. Removing dead or damaged wood can be done at any time of year and should be done as soon as possible after the damage occurs.

Many landscape plants benefit from occasional thinning or light annual pruning in which the idea is to keep the plant from getting too dense. This type of pruning involves selectively removing whole branches and twigs, especially those that are growing inward or rubbing together.

Many plants also benefit from "heading back," which is done primarily to control overly vigorous growth and to improve the look of the plant. This removes weight from the branch tips (preventing weak branches from sagging) as well as neatens the plant by shortening wayward branches.

Sometimes trees and shrubs become overgrown when they're not pruned for several years. When that happens, flowering plants may not bloom as well. In this case, "rejuvenation pruning" can be done in which some of the larger branches are removed or shortened. In the case of multi-stemmed plants such as lilac, forsythia, mock orange, deutzia and redtwig dogwoods, stems that are three or more years old can be removed to the ground. The idea in both cases is to stimulate new growth that will flower better.

When removing big branches (which includes "limbing up" a tree's lower branches), make a three-step cut to prevent the branch from tearing bark as it falls away. Always cut to the outer edge of the little ring (the "branch collar") that can be seen at the point where branches attach to one another

and to the trunk. Do not leave stubs out from the collar and do not cut into the trunk.

When shortening branches, cut back to just above a branch or bud that's facing in the direction you want the new growth to go. This not only helps control the plant's size but also its shape and look.

Timing is important in knowing what to prune when. One good rule of thumb to remember in pruning flowering shrubs is that varieties that bloom from mid-June on (from buds that form in the spring) should be pruned at the end of winter or early spring. Varieties that bloom in early spring to mid-June (from buds that formed last summer and fall) should be pruned immediately after they're done flowering. Remember it this way: "If it blooms early, prune it later. If it blooms later, prune it early." (See the chart at right.)

To control size, most needled evergreens are best pruned at the end of winter (i.e. March). This includes arborvitae, hemlocks, yews, Douglas firs, junipers and falsecypress. Broad-leaf evergreens that you're growing for form as opposed to flowers also can be trimmed at winter's end. These include boxwoods, privets and Japanese, inkberry and blue hollies.

For spruce and pines, wait until these have finished putting out their new growth toward the end of May before cutting them. Then remove all or some of the new growth to control size as needed. Avoid cutting back into older wood. Even with the other evergreens, avoid cutting off so much growth that you're back into the bare, non-needled wood. Light, regular pruning is much better than gargantuan whackbacks every decade.

Second or even third lighter neatening cuts also can be made to most evergreens in June or July, although be aware you'll remove all or most of the flower buds that will turn into berries if you heavily shear inkberries and blue hollies.

The worst time to prune any plant is early fall when cuts will encourage new growth that may not harden off in time for winter. It's also not good to prune in a drought because you don't want to encourage new growth when the plant is struggling just to keep its current growth alive.

For leaf-dropping trees and shrubs, these are best pruned over winter when the leaves are off. Trees are not only dormant then, but it's easier to see the branch structure. Prune maples and birches in January before the sap starts flowing, but most others can be done any time before buds start opening. Do not prune while the buds are opening and the leaves are growing. For trees and shrubs that need to be pruned but that bloom in spring, wait until they bloom and then prune immediately afterward.

A few other pruning pointers:

--With a few exceptions, don't cut off any more than one-quarter to one-third of a plant's growth in a single year.
--Don't "top" trees by shearing off all growth from the tips back. It'll encourage lots of weak new twiggy growth.
--Don't use tar, paint or similar wound dressings after pruning. These can encourage rotting and disease.
--Don't climb up in trees to prune -- especially not with a chainsaw in hand! Hire a pro if your bigger trees need work.
--Don't let plants get so overgrown and out of control that you have to cut off big branches. Earlier is better. Big wounds don't heal as well as small ones.
--Trim hedges so they're wider at the base than at the top.
--Keep your pruning saws and blades sharp.
--Step back and look often while you're pruning. Remember, once you cut a branch off, you can't glue it back on.
--Select the right size plants for your site up front. It'll save you lots of needless pruning later.

Prune right after bloom	
Azalea	Lilac
Beautybush	Magnolia
Bittersweet	Mahonia
Bridalwreath spirea	Mock orange
Chokeberry	Mountain laurel
Cherry	Ninebark
Clematis (spring bloomers)	Oakleaf hydrangea
Cotoneaster	Pieris
Crabapple	Plum
Daphne	Pyracantha
Deutzia	Quince
Dogwood (tree types)	Redbud
Enkianthus	Rhododendron
Flowering almond	Scotch broom
Fothergilla	Serviceberry
Forsythia	Smokebush
Fringetree	Snowbell
Heat	Spicebush
Honeysuckle	Sweetshrub
Hydrangea macrophylla	Viburnum
Kerria	Weigela
Lavender	Witch hazel

Late winter/early spring	
Abelia	Heptacodium
Barberry	*Hydrangea arborescens*
Beautyberry	*Hydrangea paniculata*
Burning bush	Oaks
Butterfly bush	Potentilla
Caryopteris	Roses
Clematis (summer bloomers)	Rose of sharon
Coralberry	St. John's wort
Crape myrtle	Spirea (most)
Dogwood (shrub types)	Summersweet
Euonymus	Snowberry
Fruit trees	Vitex
Heather	

After-planting care

Now that the landscape is planted and nursed through those first touchy years, what care is needed down the road? Here's a plant-by-plant look at such chores as fertilizing, deadheading and in-season and end-of-season care:

Trees and shrubs.

Most of these will do just fine with absolutely no additional fertilizer -- especially if you're fertilizing the lawn nearby. If you do need to fertilize to correct a soil-nutrition problem, a granular fertilizer that's either organic or high in slow-release nitrogen is best applied high in slow-release nitrogen is best applied in early spring.

Acid-loving plants also may benefit from a mildly-acidifying fertilizer such as Espoma's Holly-tone and/or occasional additions of sulfur if plants are showing symptoms or if a soil test dictates it. One sign that acid might be needed is when leaf tissue turns a light green or yellow between green veins (a condition known as "chlorosis").

Plants that prefer acidy soil include: azaleas, rhododendrons, roses, dogwoods, pieris (Japanese andromeda), most evergreens, hollies, blueberries, mountain laurel, camellias, heather, serviceberry, bayberry, birch, fruit trees, oaks and sourwood.

Other care includes pruning as needed, watering if a drought hits, and watching for any diseases or pest problems that should be addressed.

Annual flowers.

Plant in early May, water every two or three days until established and then every three or four days in lieu of rain. Remove spent flowers to keep the plants looking good and to encourage more blooming. Many annuals today are "self-cleaning" and do not need dead-heading. If you want to reduce maintenance, look for these self-cleaners: alyssum, begonias, angelonia, impatiens, lantana, verbena, most petunias, vinca, dusty miller, melampodium, portulaca, blue salvia and some zinnias.

Annuals are heavy feeders. Mix a timed-release fertilizer or lots of compost into the soil at planting time or water with a water-soluble fertilizer labeled for flowers every few weeks throughout the growing season.

Monitor annuals for pests and disease during the summer and pull and compost plants when they go downhill in the fall or are killed by frost.

Perennial flowers.

Most perennials do fine with just an annual scattering of granular fertilizer over the beds early each spring just before new growth starts. One of the best choices is Espoma's Flower-tone. Otherwise, look for a product that's high in slow-release nitrogen and formulated for flowers.

Dead-heading spent flowers will encourage most perennials to bloom longer as well as keep the plants looking neater. Some of the later-blooming perennials such as asters, sedum and mums benefit from early-season cutbacks by one-half to keep the plants stockier at bloom time.

Most perennials benefit from digging and dividing the roots to make new plants every few years. And almost all perennials are cut down either at the end of the growing season or at the end of winter to make way for the following season's new growth.

In general, it makes sense to cut back in fall perennials that quickly turn to mush after frost. Hardy perennials that don't need their own dead foliage as insulation in winter also can be cut back in fall.

It's OK and even helpful to let other types of perennials go for the winter and cut them back in March. These would include plants that provide seeds for birds over winter (i.e. coneflowers and black-eyed susans), plants that benefit from dead foliage as insulation (i.e. mums and scabiosa) and plants that hold up well over winter (i.e. ornamental grasses, helleborus and liriope). Only a few perennials are durable enough that they can get by with only an occasional light neatening.

To divide perennials, dig the whole plant out of the ground using a spade or digging fork. Break the roots into two or more pieces, using your hands, a knife, an ax or a spade, depending on the plant. Make sure each division has roots of its own. Toss any old or diseased parts. Then replant the good divisions at the same depth as they were previously growing.

The plants themselves often will let you know when it's time to divide them. They may not grow as vigorously as before, their bloom may go downhill, or they may die out in the center.

Some perennials like to be divided every couple of years, while others may go five or six years between divisions. Some do not like to be divided at all, such as baptisia, candytuft, delphinium, euphorbia, foxglove, hardy

geranium, santolina, Russian sage, sea holly, artemisia and trillium.

For more on perennial care, two excellent resources are the books "The Well-Tended Perennial Garden" by Tracy DiSabato-Aust (Timber Press, $34.95, 2006) and "The Perennial Care Manual" by Nancy Ondra (Storey Publishing, $24.95, 2009).

How to prune specific perennial flowers

Cut to the ground after frost browns foliage in fall

Anemone	Coreopsis	Lysimachia
Armeria	Crocosmia	Penstemon
Aster (New York)	Daylilies	Peonies
Balloon flowers	Filipendula	Phlox (tall)
Baptisia	Foxglove	Physostegia
Beebalm	Goats beard	Salvia
Bleeding heart	Goldenrod	Spiderwort
Boltonia	Hardy hibiscus	Verbascum
Brunnera	Helianthus	Veronica
Catmint	Helenium	
Centaurea	Hosta	
Cimicifug	Iris	
Columbine	Kalimeris	
Corydalisa	Lilies	

Cut to the ground in early spring before new growth begins

Acanthus	Gaillardia	Mums
Amsonia	Geum	Oenothera
Asclepias	Heliopsis	Phlox (creeping)
Aster (Frikart's)	Hollyhocks	Plumbago
Astilbe	Jacob's ladder	Poppies
Campanula	Lamb's ears	Rose mallow
Coneflowers	Liatris	Rudbeckia (black-eyed susans)
Delphinium	Ligularia	Sea holly
Echinops	Liriope	Sedum
Epimedium (barrenwort)	Lobelia (cardinal flower)	Stokesia
Eupatorium	Lupine	Turtlehead
Ferns	Lychnis	Yarrow
Foamflowers	Monkshood	

Cut back to 2 or 3 inches in early spring before new growth begins

Artemisia	Hardy geraniums	Red hot poker
Baby's breath	Jupiter's beard	Russian sage
Candytuft (after blooming)	Lady's mantle	Scabiosa
Gaura	Ornamental grasses	Thyme

Don't cut, just trim off ratty foliage as needed

Ajuga	Ferns	Ornamental strawberry
Bergenia	Foamybells (Heucherella)	Pulmonaria
Coralbells (Heuchera)	Helleborus	Snow-in-summer
Dianthus	Lamium	Verbena

Spring-flowering bulbs.

Spring-blooming bulbs such as tulips, daffodils and hyacinths are best planted from late September through mid-November and fertilized then and/or each spring with a balanced fertilizer formulated for bulbs, such as Bulb-tone or Bulb Booster. (These are more effective than just plain bone meal.) It's OK to cut off the flower stalk after the bulb has bloomed, but do not cut the foliage at least until it begins to yellow. The foliage is needed to produce sugars that the bulb needs to regenerate itself for bloom next year. Do not bend, braid, tie or otherwise mutilate the foliage during the important post-bloom period.

Once the foliage yellows or browns, cut it to the ground. Bulbs can be dug, divided and moved at this time or in the fall (if you can find them then). No need to water bulb beds during the summer. In fact, they prefer to be kept dry while dormant.

Summer-flowering bulbs/tubers.

These include cannas, callas, caladiums, elephant ears, dahlias and gladioli. They're too tender to survive reliably outside over winter and are best planted outside in early May after danger of frost. These also can be started inside in late March or early April and moved outside (after gradually acclimating them) in early May.

Summer bulbs benefit from soil that has been improved with lots of compost and/or the same fertilizer used for spring bulbs. Keep them watered during the growing season and deadhead after bloom to encourage repeat blooms.

When the first frost browns the foliage of these plants, cut the foliage to a few inches, dig the bulbs or tubers, rinse and air-dry for a few days. Then store over winter inside in peat moss, sawdust, sand or similar material. Storage temperatures in the 40s are ideal. Check periodically and discard any bulbs that are rotting. If it's too dry and the bulbs are getting noticeably light and drying out, lightly mist the storage material. The idea is to keep these bulbs in a cool setting that's not so humid that they rot but not so dry that they shrivel up.

Container plantings.

Plants in pots, window boxes, hanging baskets and other containers require special care because of the limited soil. The biggest difference is that container plants need to be watered much more often than in-ground plants especially -- in hot, windy weather. You may need to water daily for most of the summer.

Keep in mind: The smaller the container, the quicker it will dry out. A few bigger containers will be much easier to care for than many small ones. When you water, add enough so that it drains out the bottom holes. Water-holding crystals or gels (i.e. Soil Moist or TerraSorb) added to the potting mix at planting time help reduce watering demands. So does lining the inside of your containers with plastic to cut down on evaporation. (Do not line the bottom of the container, though, or you'll trap water.)

Plants in containers also need to be fertilized more than in-ground plants. For blooming plants, a higher-phosphorus flower fertilizer (or balanced fertilizer formulated for flowers) at half-strength every week. If you don't mind the extra work, fertilize at quarter-strength every other day. Feeding "weakly weekly" usually brings better results than a single, full-strength monthly feeding.

Don't scrimp on cheapo potting soil. Go with good-quality, light-weight potting mix. To head off disease, use fresh mix each year, although some people get by with same mix year after year. It's fine to work a few handfuls of fresh compost into each pot at planting time, too.

Lawn care

Two main approaches here. One is the so-called "four-step" plan in which chemical fertilizers, insecticides and/or herbicides are applied four times during the growing season to create a thick, high-performance, weed-free lawn. The other is an organic or "integrated pest management" approach that involves less fertilization and targeted treatments of bugs and weeds only as needed.

Either way, these cultural steps make good sense for everyone:

--Cut grass on the highest lawn-mower setting during the growing season. Tall grass encourages deeper rooting, shades the ground to better retain soil moisture and chokes out weeds better. It'll still look neat after it's cut.

--Let the clippings lie. Grass clippings add organic matter to the soil as they break down. The only exception is if there are so many clippings that they mat down and smother the growing grass. In that case, rake it and compost it or use it as mulch.

--Don't irrigate existing lawns. Unless you water deeply (which takes a lot of time and water), you'll encourage roots to grow close to the surface where the moisture is. Lawns are best left to go dormant and brown in summer droughts. Healthy lawns can survive 6 weeks of dormancy without water.

--Do a core aeration every fall or two. This involves removing plugs of soil from the ground and depositing them on top of the grass. This helps improve compacted soil and allows for deeper root growth. Aeration machines can be rented or companies can be hired to do the job.

--Every few years, do a soil test to make sure your lawn has adequate nutrition and is at the proper soil acidity. A pH of 6.8 is perfect. If it's getting too acidy, add lime.

--Every fall or two, overseed the lawn with new grass seed. This keeps the lawn thick and replaces older, dying turf with newer varieties that are more vigorous and disease-resistant.

--If the lawn soil is poor, consider adding a quarter-inch top dressing of sifted compost or peat moss every year or two.

It's up to personal preference whether you go the four-step or organic route.

If you use the four-step approach, simply buy and apply the products according to the labels. Most company's programs have numbers on the bag that correspond with the treatment. Typically, Step 1 is applied in early spring and includes a fertilizer and crabgrass preventer. Step 2 is applied in mid-spring and includes a fertilizer and weed-killer. Step 3 is applied in summer and includes a fertilizer and insecticide. And Step 4 is applied in fall and includes a dormant-season fertilizer. This takes a preventive approach to weeds and bugs and usually leads to good results, so long as the steps are continued. The down side is that you're likely applying products you really don't need and may be needlessly polluting groundwater.

The organic approach uses longer-acting fertilizers that can be applied just twice per year once in spring and once in fall. There's virtually no chance you'll burn the lawn as is possible by over-applying chemical fertilizer or applying it when there's a summer drought going on. (Lawns should never be fertilized when dormant in a

drought -- organically or otherwise.) This approach also relies heavily on the good cultural approaches described above to keep the lawn thick and healthy, which will lessen the chance of weed, bug and disease problems.

If weeds become a problem in an organic lawn, they can either be dug out or spot-sprayed with a broad-leaf weed-killer labeled for lawn use. That at least limits herbicide only to areas where needed as opposed to applying a granular herbicide over the whole lawn whether there are weeds or not.

A few good online resources for more lawn-care information:

Ohio State University: http://ohioline.osu.edu/l187/index.html
Penn State University: http://turfgrassmanagement.psu.edu
Lebanon Seaboard Corp.: http://www.greenviewfertilizer.com/resources
Safe Lawns (organic care): http://www.safelawns.org

Pests and diseases

Whole books have been written on this subject. One good one is "What's Wrong With My Plant? (And How Do I Fix It?)" by David Deardorff and Kathryn Wadsworth (Timber Press, $34.95, 2009.) But one of the most important things to keep in mind is that not all bugs need to be sprayed and not all apparent plant damage requires action. In fact, if you've done a good job at putting the right plants in the right place in good soil, you'll have very few problems with pests or disease. Healthy plants seldom run into these problems, and when they do, they can almost always fight off or grow through the problem without any action on your part.

One of the best things you can do is regularly look at your plants to see if any damage is occurring. Most problems that require action can be treated far more effectively when the problem is caught early. In fact, most plant diseases are almost impossible to stop if they're not detected early.

Once you notice damage on a plant, it's important to determine what the problem is before randomly spraying whatever you happen to have in the garage. If the damage is bug-related, for example, and you spray a fungicide intended for disease control, you won't fix the problem but will be wasting money while unnecessarily polluting the environment.

There's no good reason to spray everything in your yard "just in case."

Also before treating, determine whether the damage is merely a cosmetic or temporary problem that will take care of itself or one that actually threatens plant health. If it's a serious problem that requires action, then zero in on the most effective, targeted and least-toxic treatment for that particular problem.

Reference books, garden centers, Extension offices, Penn State-trained Master Gardeners and even knowledgeable neighbors can all be good resources to separate the fake-outs from the real problems. These days, the Internet also is loaded with great sites to help you both diagnose problems and decide what to do about them if anything.

Some good online resources:

University of Maryland plant diagnostics: http://plantdiagnostics.umd.edu
Univ. of Minnesota plant diagnostics: www.extension.umn.edu/yardandgarden/diagnostics
Penn State's woody-pest plant guide: http://woodypestguide.cas.psu.edu
Morris Arboretum plant clinic: www.paflora.org/plantclinic/index.html
Penn State bug fact sheets: www.ento.psu.edu/extension/fact_sheets.html
Penn State disease fact sheets: www.ppath.cas.psu.edu/EXTENSION/PLANT_DISEASE/index.html
Virginia Tech fact sheets: www.pubs.ext.vt.edu
Pennsylvania IPM Problem Solver: http://paipm.cas.psu.edu/1445.htm

Most times you'll have a choice of treatments. These might include mechanical measures such as rinsing spider mites off a dwarf Alberta spruce with a stiff spray of water or hand-picking bagworms off of an arborvitae. Or it

might involve “low-impact” measures such as spraying with horticultural oils or insecticidal soaps -- both of which have lesser effects on the environment and non-targeted organisms than longer-acting chemical pesticides. Or there might be a choice of several chemical pesticides that will get the job done.

Sometimes there are only certain times of year when sprays are effective against certain diseases or bugs. So it’s not only important to select an effective control but to make sure you’re using it at the right time.

The good news is that there are many plants that seldom, if ever, get pests or disease. It’s only a relative few number of landscape plants that are commonly plagued by trouble. The problem is these happen to be some of the best-known, most-used plants.

Following are some fairly common problems with common plants:

American dogwood. Borers, anthracnose, powdery mildew.
Azalea. Lace bugs, scale.
Arborvitae. Bagworms.
Ash. Borers.
Cherry. Borers, Japanese beetles, webworms, black knot.
Cotoneaster. Mites.
Crabapple. Tent caterpillars, borers, webworms, Japanese beetles, scab, rust.
Elm. Dutch elm disease, bark beetles.
Euonymus. Scale, crown gall.
Hemlock. Adelgids, scale, mites.
Holly. Scale, leafminers.
Honeylocust. Plant bugs, mimosa webworms.
Juniper. Mites, bagworms, tip blight, rust.
Lilac. Borers, powdery mildew.
Magnolia. Scale.
Mimosa. Mimosa webworms.
Mountain laurel. Lace bugs, root rot.
Oak. Aphids, gall midges and wasps, oakworms, leaf blister.
Pieris. Lace bugs, phytophthora root rot.
Pine. Bagworms, weevils, bark beetles, scale, sawflies, needlecast.
Pyracantha. Lace bugs, mites.
Rhododendron. Phytophthora root rot, lace bugs, borers.
Roses. Black spot, aphids, roseslug, Japanese beetles, thrips.
Spruce. Spider mites, adelgids, scale.
White birch. Borers, leafminers.

Animal problems

Central-Pennsylvania gardeners also run into problems with animal pests, which often do far more damage than any bug. Deer are becoming an increasing problem in home landscapes, joining rabbits, groundhogs and voles as our “Big Four” animal threats. Here’s a quick look at each and what can be done about them:

Deer.

Eastern whitetail deer grow to nearly 300 pounds, they’re voracious vegetarians, and they aren’t too picky about what plants they eat when hungry. That adds up to big trouble if you’ve got a family of them nearby. A tell-tale sign of damage is ragged chewing damage, two-toed paw prints and mothball-sized droppings on the ground near your damaged plants.

Really, an 8-foot-tall fence is the only measure that works reliably well over the long haul. Deer can jump over smaller fences, so if you do fence, go 8 feet or higher. Or build two parallel fences 4 to 5 feet apart and at least 4 to 5 feet tall. (They can’t long jump both in a single jump.) Or erect an angled fence (sloped at a 45-degree angle away from your yard) that goes up at least 5 or 6 feet and also goes out 6 feet. Again, it’s a tough-looking obstacle that deer will be reluctant to try.

Other than fencing, repelling or scaring deer is an option. Since deer are creatures of habit, they quickly learn what is safe and what is not. The sooner you can convince deer that your landscape is not a good place to be, the

more likely they'll go somewhere else. Scare devices include a dog, radios, whistles, hanging pie plates, motion-sensing lights, hoses attached to a motion sensor and even propane cannons that go off automatically. There are also many scent and taste repellents, such as coyote and bobcat urine, bags of human hair, mothballs, rotten-egg sprays, Milorganite fertilizer (made from Milwaukee's sewage sludge) and a whole host of commercial potions.

Results vary with these. Two drawbacks are that deer may realize the repellents are a ruse, and scent and taste repellents must be reapplied when the material wears out or washes off.

Some people try to plant yards with plants that deer don't like, but the problem is that deer would rather eat most anything than starve to death. So even though they don't normally eat boxwoods or junipers, they might if they're extremely hungry and nothing else is around.

Rabbits.

These are more nibblers than destroyers. But if you have enough rabbits around, they can do a lot of damage. One saving grace is that rabbits also are fond of grass. So when the grass is green and growing, they may eat that for much of their diet. This explains why rabbit damage seems to be worst early in the season before grass starts growing and during droughts when lawns brown out.

A tell-tale sign of rabbit damage is the smooth, angled cuts rabbits make with their sharp front teeth. Also look for BB-sized droppings around damaged plants. Rabbits are fairly picky eaters, although their tastes seem to vary from rabbit to rabbit. In general, rabbit favorites include pansies, petunias, tulips, dianthus, young sunflower shoots, most fruits and vegetables and even tender, young bark in winter.

A fence that's 2 to 3 feet high and buried a few inches will discourage most rabbits from jumping or burrowing. Chicken-wire or hardware-cloth trunk wraps will protect young trees in winter. While that's fine for edibles and trees, most gardeners don't want fences around their flower beds. A repellent of fox urine is pretty effective in this case, so long as the scent is regularly replaced. Dogs and cats also may scare rabbits away. Or try any of the following that some people have had success with: muslin bags of bloodmeal, mothballs, human or cat hair, hot-pepper or garlic sprays, hanging pie tins, commercial repellents or "liver tea," made by soaking a piece of liver in hot water for several hours and then watering the area with it.

Rabbits also can be trapped using apples, carrots, corn, celery or cabbage as bait. Or you might try planting a "sacrificial garden" of rabbit favorites in hopes that this free food will satisfy your rabbits before they get to the flower bed.

Groundhogs.

This overgrown rodent is second only to deer in scope of garden damage. Groundhogs like cabbage, broccoli and other vegetables best, but they'll also eat many other plants. They're also very messy eaters, so look for half-eaten leaves to be strewn around nearby after a groundhog marauding session.

A fence also is a good way to deal with groundhogs. Since they dig as well as they climb, bury any fence about 2 feet deep. Use a 3- or 4-foot-tall fence above ground but let it unsecured at the top so groundhogs won't have support to climb up and over once they reach the top. They're surprisingly agile climbers. Low-to-the-ground electric fencing is another option.

Groundhogs also can be trapped using melon rinds, apples or cabbage as bait. Fox or bobcat urine can repel them, and so might dried blood or ammonia-soaked sponges. Dogs are particularly effective at scaring away groundhogs. Another strategy is locating groundhog holes, plugging them up and then tossing a gas canister down one of the holes. Or go with the sacrificial garden approach described for rabbits.

Voles.

These are little brown mouse-like rodents that are seldom seen. They make golfball-sized holes in the ground where they tunnel, and they also are the animals responsible for making those irregular surface "highways" in the lawn.

Voles are sneaky critters that do much of their damage underground by chewing roots, devouring bulbs and girdling the trunks of young shrubs and trees. They can kill whole plants before the homeowner ever even knows anything is wrong. And since they stay underground or under bushes, they go under-blamed for the widespread damage they really cause.

Putting a cat on patrol is one of the best ways to eradicate voles. Voles also can be trapped using peanut butter or oatmeal as bait. Or they can be killed using mouse snap traps with the same bait. Bobcat or fox urine sometimes repels them, as does castor oil or commercial sprays containing castor oil. Bulb beds can be protected by placing chicken wire and mulch over the planted bulbs to keep voles from tunneling down. Or you can place poison pellets in their runways.

And a few final words

One last bit of advice is to consider starting a compost pile or two. Pick an out-of-the-way area and stack your spent plants, fallen leaves, grass clippings, kitchen peelings and other organic matter. You don't have to build or buy bins if you don't want. A mix of 4 parts of brown materials (i.e. leaves, straw, paper, etc.) for every 2 parts of green materials (i.e. grass clippings, pulled weeds, vegetable peelings, etc.) with an occasional shovel full of soil tossed in is a perfect mix. But even if you just pile up what you have and let it rot, you eventually get compost. It'll just take longer. Nothing improves the soil better than compost. And you'll save landfill space by not throwing away compostable materials.

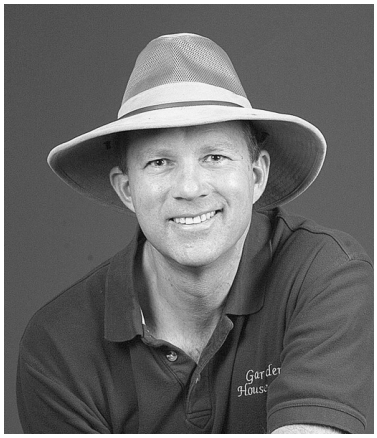
All of this gardening stuff might seem overwhelming at first, but you'll be surprised at how experience will quickly make things easier. You might also be surprised at how forgiving most plants are. If you get mixed up and prune that lilac at the wrong time, for example, the worst that will happen is that you won't get flowers this year.

Even if you manage to remember only a few key points, such as not planting too deeply and knowing how to water correctly, you'll be doing your yard a big favor. By doing a few big things right now and gradually doing more "right" things over the years, you'll be an expert eventually.

Finally, have fun! Enjoy the beauty you're creating. Be thankful for the health you've got to bend down and pull that weed. Take a minute to appreciate the fresh air, the scent of your flowers and even the occasional blue sky that pops out among the hailstorms and three straight weeks of rain.

Don't worry about those imperfections in the yard, let the rabbit damage roll off, and accept the fact that a garden really is never completely done. Even when plants die (which they inevitably will do), look at it as an opportunity to try something new!

Happy gardening!!!



George Weigel