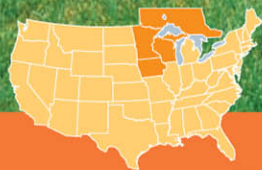


The Complete Guide to
**UPPER MIDWEST
GARDENING**



**Techniques for Growing Landscape & Garden Plants in
Minnesota, Wisconsin, Iowa, northern Michigan & southwestern Ontario**

The Complete Guide to

UPPER MIDWEST GARDENING

Techniques for Growing Landscape & Garden Plants in Minnesota,
Wisconsin, Iowa, northern Michigan & southwestern Ontario

by Lynn Steiner



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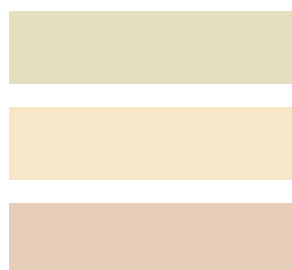
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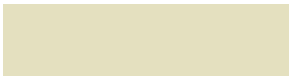
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About this Book

Just like North America is made up of many different types of people, it is also made up of many different plant-growing regions. And just as you can often tell where a person comes from by the way they dress, speak, or act, you can often tell where a plant comes from by the way it looks and how it grows. This book is all about celebrating the region where you live and enjoying the unique gardening opportunities it has to offer.

You'll find many benefits to be reaped from tending a home garden. Not only will you add beauty to your landscape and neighborhood, you will increase the value of your property and improve your quality of life.

Gardening allows you to mix relaxation with beneficial outdoor activity while providing an outlet to relieve stress. When you add vegetables and herbs to your garden, you will also reap the additional health benefits you get from growing your own food.

In addition to providing you with a place to relax and spend time with friends and family, your garden can also help preserve part of your region's plant heritage. When populated with regional plants, your gardens will provide food and habitat for native fauna, especially beneficial insects and birds and butterflies. Native pollinating insects rely on regional plants for food and nectar, and gardens are becoming more and more important in this process as natural plant habitats are lost.

This book is intended for anyone who wants to take a more regional approach to his or her gardening. Maybe you've just purchased your first house and you are looking to spruce it up. Maybe you're finally ready to make the commitment to growing your own food and want to know how to get started. Maybe you're looking to install your first perennial border. Or maybe you've inherited an overgrown landscape and need to know how to get it back in shape.

Whether you garden a tiny city lot or a sprawling country estate, you'll find this book is just what you need to get started and to sharpen your skills. The pages are packed with practical information and hundreds of step-by-step photos to take you through the basic techniques involved in all major aspects of gardening. The information is designed to help you become a responsible and sustainable gardener so you can complement your natural surroundings. Priority is put on choosing the right plant for the right place so you can reduce or eliminate your need for chemical fertilizers, pesticides, and watering, as well as on choosing plants that are beneficial to native pollinating insects and birds.

A Garden of Your Own

The Upper Midwest and southwestern Ontario were once home to stately, shaded forests as well as sunny, open prairies. In between was a mosaic of plant communities. These included many types of water features, ranging from trickling streams and small ponds to rushing rivers and freshwater lakes with expansive lakeshores. There were also savannas and barrens that were a mix of widely spaced trees with showy flowers and grasses underneath. All of these habitats provide inspiration for gardeners in this area and celebrate plant heritage by creating special places of comfort.

Gardeners in the Upper Midwest and southwestern Ontario have four distinct seasons to contend with. Each year, the welcome new growth of spring glides into lush summer gardens filled with a brash show of color. Fall brings a more diffused color palette for one last gasp of foliage before the subtlety of winter returns. Gardening heightens our awareness of these seasons and allows us to experience them in all their glory in our own yards.

The climate of this region provides enough natural moisture, sunlight, and summer warmth to support many types of plants. Soils range from clay to loam to sand, and are generally fertile enough to successfully grow a wide variety of plants without a lot of input. Snow cover helps insulate plants so they are able to survive harsh winters.

The Upper Midwest was once home to many different plant communities, including the tall-grass prairie. It is this region's unique climate, geography, and natural features that make it a special place to tend a piece of land.





But this region also provides many challenges for gardeners. At the top of the list are the harsh winter temperatures and the short growing season. Temperatures can dip to 30 or 40 degrees below zero in parts of the region, and the growing season is limited by late spring frosts and early fall cold snaps. This region also receives harsh, drying winds throughout the year that can topple large trees and quickly dry out young plantings. By acknowledging these challenges and choosing plants that tolerate, and even thrive in, these conditions, you will be on your way toward a successful garden.

This book will help you sort through the many plants available and choose the ones that are best suited to your landscape, your growing conditions, and your lifestyle. Plants included in this book were chosen based on their suitability for the climate of the Upper Midwest and southwestern Ontario, their availability at local garden centers, and their low maintenance. Many of them are native plants that have evolved in the same growing conditions. Most are resistant to insect and disease problems and adapted to natural rainfall amounts. Many also provide important pollen and food sources for native insects and birds.

Capitalize on the beauty of the Upper Midwest and southwestern Ontario and use native plants to their best advantage. Many native prairie plants such as butterfly milkweed, coreopsis, and purple coneflower make beautiful garden flowers.

It's important to have fun in your garden. There are no hard-and-fast rules in gardening. Experiment to learn what works best for you and your lifestyle. This casual cottage-style garden brimming with yellow oxeye flowers works well with this old farmhouse.



Native pollinating insects rely on regional plants for food and nectar sources, and gardens become more and more important for this as more and more natural areas are lost. Here a bee and a swallowtail butterfly both enjoy purple coneflowers.





Because your gardens will be filled with plants that are well-adapted to the climate, soil, and temperatures found here, they will be easy to maintain. This shade garden includes native yellow lady's slipper, foamflower, wild geranium, and Solomon's seal, interplanted with hostas and bleeding hearts.



This region boasts beautiful fall color, thanks to the sugar maples and other trees that do well here.



There's no doubt that winter is long in this region. But long winter doesn't have to be boring. Use shrubs and trees with interesting bark and colorful, persistent fruits. Choose perennials with showy seed heads and ornamental grasses that make your landscape attractive year-round.



The growing season may be on the short side, but there are still many choices for people who want to grow vegetables and herbs. Cool-season vegetables like cabbage do especially well in this region.



The climate makes it difficult to grow hybrid tea roses, but hardy shrub roses such as "Nearly Wild" do very well here and are a beautiful alternative.



THE BASICS

GETTING OFF TO A STRONG START

Anyone can garden. It may only be a few containers on the deck of your high rise or it may be a large country estate with room for perennial borders, vegetables, and fruit trees. No matter what size your garden is, there are a few basic principles you need to understand to manage it successfully.

This chapter explains some of the basic terminology so you will be able to “talk the talk” when buying plants. You’ll get a thorough understanding of the limitations of your climate and your site and learn how to work with what you have. Then you’ll learn how to prepare your garden site before you move on to the excitement of choosing which plants to grow and where to grow them.

Once you have mastered the basics, you will be on your way to creating a beautiful garden that enhances your property as well as brings you joy as you tend to it. This border includes easy-to-grow plants such as astilbe, sedum, and cosmos.



“Vinca” is a common name for this showy garden annual (*Catharanthus roseus*), top, as well as for an unrelated perennial groundcover (*Vinca minor*), bottom, that can become invasive in certain situations. A good reason why you can’t always rely on common names.



‘Goldsturm’ is a common cultivar of black-eyed Susan (*Rudbeckia fulgida*). It is good for gardeners to know cultivar names, since this is how many plants are labeled at garden centers.

TALKING THE TALK

One of the most confusing things for new gardeners is understanding the lingo. You may feel like you need to learn a whole new language before you can successfully shop for a plant! Here are a few terms that will be helpful to know as you walk the aisles of a garden center or peruse the pages of a seed catalog. You will also find more terminology defined in specific chapters throughout this book.

Common names are given to plants by the people who use them. Although they are fun and popular, they can be confusing because they often differ in different areas of the country and several plants may share the same common name.

A better name to learn is the **botanical name**, which consists of two parts: genus and species. This name is Latin, which can make for some interesting pronunciations, but each plant has only one correct botanical name and if you use this name, you can be assured of which plant you are getting.

The first part of the two-part botanical name is the **genus**. It indicates a group of plants with similar characteristics, usually flowering and fruiting parts.

It is followed by the **species**, which more specifically describes the individual plant. The genus name is capitalized and is followed by the lowercased species name. The two words are usually set in italics or underlined, as compared to the common name which is not.

A **cultivar** (“cultivated variety”) is a plant set apart because it has one or more traits that distinguish it from the species. It does not occur naturally but rather is maintained by cultivation. A cultivar name should be placed in single quotes and placed behind the species name or before the common name, but it is not always found this way. Sometimes it is used alone and sometimes it is used as a common name. And sometimes it is indicated by a “cv.” in front of it.

A **hybrid** is a plant that originated from a cross between two species. It is set off by a small “x” before the species name. Hybrids are plants that have been manipulated to have the best qualities of each parent. You can have a cultivar of a hybrid.

Other names gardeners may run across include **patent** and **trademark** names. These are similar to common names but they are patented by the breeder and cannot be used for any other plants. These names are indicated by the symbols TM or [®] and they are not set in single quotes.

Annuals complete their life cycle in one growing season, usually starting out as seeds in spring and dying when a frost hits or they have set seeds and completed their “mission” on this earth. They may reseed, but generally annuals are replanted every year. Examples of annuals include petunias, marigolds, lettuces, and carrots.

Perennials live for more than one growing season, if all goes well, that is! These plants have root systems that survive winters. This term is generally used to describe

herbaceous plants, but technically it applies to woody plants as well. Herbaceous perennials have a shorter blooming period than annuals, but they live from year to year. Examples of perennials include hostas, delphiniums, and daylilies, as well as asparagus and sage.

Biennials require two growing seasons to complete their life cycle. Typically they grow leaves the first year and then produce flowers the second season. Examples of biennials include foxglove, hollyhock, and sweet William. They are typically sold as second-year plants that will bloom the year you buy them and are often grouped with annuals.

Herbaceous plants are those that have soft, succulent, nonwoody stems. Annuals, perennials, bulbs, and grasses are herbaceous. They are in contrast to **woody plants**, which have bark or some other hard tissue that persists from year to year. Woody plants include trees, shrubs, and vines, which all grow in diameter from year to year.

Hardy is a relative term. It is generally used to describe plants that can withstand prolonged temperatures at or below freezing without being killed or severely damaged. But in northern areas, hardy can be used to describe plants that survive temperatures below zero or even colder.

Half-hardy plants can tolerate long periods of cold weather, but they may be damaged or killed by frost. They often die to the ground in a freeze but then grow back.

Tender plants are typically tropical plants that are grown as houseplants or annuals in northern climates. They cannot tolerate temperatures below freezing.

Plants can be **evergreen** or **deciduous**. Deciduous plants lose all their leaves at one point, usually in fall, and get a new set, usually in spring. Evergreen plants have leaves that stay green and grow throughout the year. They are typically thought of as needled conifers such as spruces and pines, but there are also “broad-leaved” evergreen plants such as rhododendrons. Some herbaceous plants also remain evergreen throughout the year. All evergreens have their leaves replaced, it’s just not all at once like deciduous plants so it is less noticeable.

Dioecious and **monoecious** are terms used to describe where a plant’s reproductive parts are found. Plants that have male and female flowers on separate plants are dioecious. Plants that have both flower types on the same plant are monoecious. This is mainly important if you are growing plants that you either want to produce fruits or you don’t want to produce fruits. If you want fruits on dioecious plants (i.e. hollies) you need to make sure you plant both male and female plants. If you don’t want fruits (i.e. ginkgo) you want to make sure you only plant a male species.

THE NAME GAME

These are all names for the same plant:

- ⊗ **Common names:** Red maple, rock maple, scarlet maple, soft maple, swamp maple, water maple
- ⊗ **Species:** *Acer rubrum*
- ⊗ **Cultivar:** ‘Franksred’
- ⊗ **Trademark name:** Red Sunset™



Red Sunset™ maple



“Variegated” is a term used to describe plants with leaves that are edged, spotted, or blotched with one or more colors, typically white or yellowish but also shades of red and purple. *Yucca filamentosa* ‘Color Guard’ is shown here.

ZONING IN

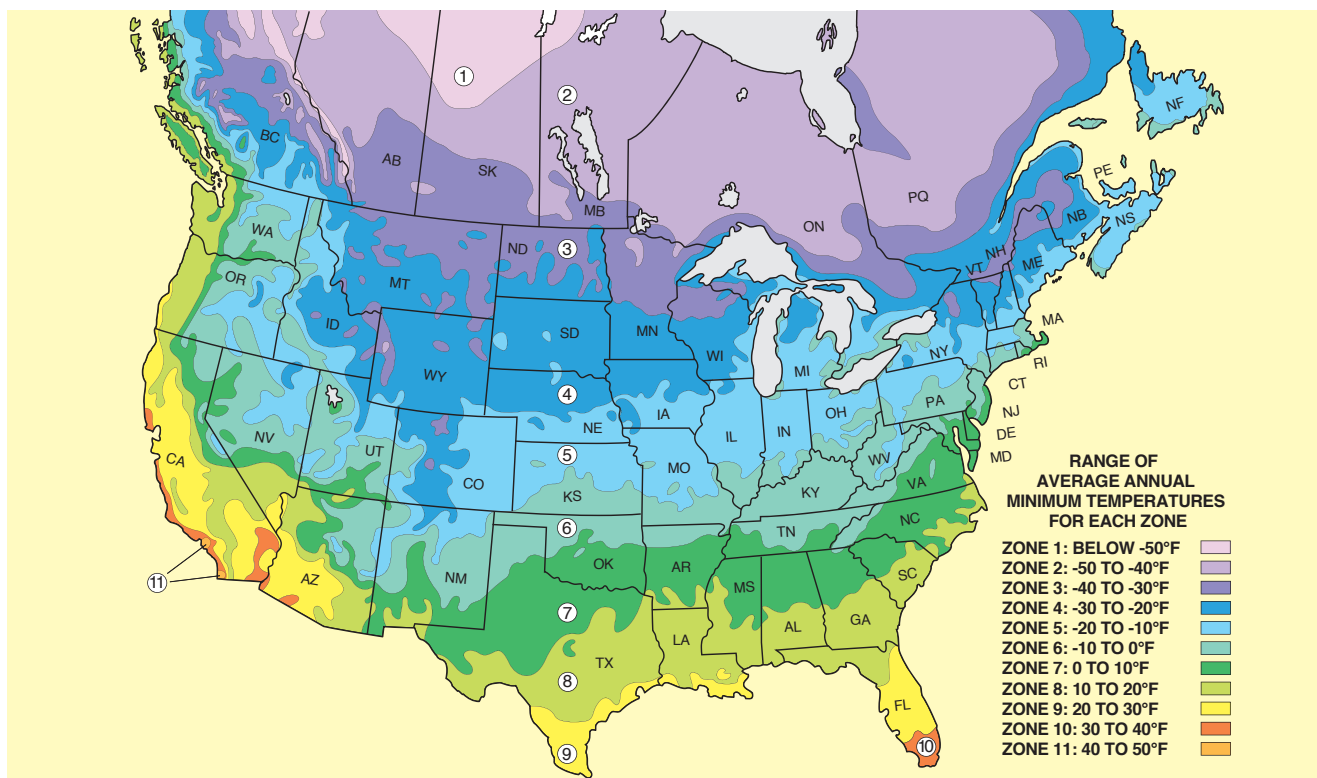
A very important aspect of successful gardening is understanding your climate and the limitations it puts on your gardening endeavors. The United States Department of Agriculture has developed a plant hardiness zone system that you should use as a starting point for plant selection. It is based on average minimum temperatures in an area. The lower the number of the hardiness zone, the more severe the winter climate.

Within your landscape you will most likely have “microclimates;” areas that are more protected or more exposed. For example, the area along a south-facing building may be protected enough to support plants rated one or even two hardiness zones warmer (higher number) than your overall ranking. And an open, exposed area on the north side of your house may be a zone colder (lower number).

If you will be growing tender annuals and vegetables, you will also want to be aware of your first and last frost dates, which in turn determine the length of your growing season. These dates will help you determine when to sow seeds and plant tender plants outside in spring as well as how late in the season you can plant perennials and woody plants. But don't rely solely on the calendar. Frosts can come earlier in autumn or later in spring.



The area along the south side of a building often warms up quite a bit earlier in spring than other areas, so it is a good place to experiment with tender shrubs and other plants that might not normally be hardy in your area.



Identify your hardiness zone and use it as a starting point for your plant choices, but do not live and die by your hardiness zone. There are many factors that come into play when it comes to plant survival. Wind, humidity, rainfall amounts, and elevation—as well as age of planting and location in your yard—will affect a plant's ability to survive.

FIRST AND LAST FROST DATES

Here are some average last and first frost dates for selected cities in the Upper Midwest and southwestern Ontario. Use it as a basis to plan your seed starting and planting. Your state university extension service's website is a good place to get more accurate information for your specific area. They usually have frost dates listed with information on vegetable planting.

CITY	LAST FROST DATE	FIRST FROST DATE
Milwaukee, WI	April 27	October 14
Des Moines, IA	April 28	October 4
Madison, WI	May 2	October 6
Sioux City, IA	May 2	September 29
Green Bay, WI	May 6	October 4
Marquette, MI	May 11	October 13
Minneapolis, MN	May 11	September 27
Sudbury, ON	May 17	September 25
Bemidji, MN	May 17	September 23
Thunder Bay, ON	June 1	September 15
Gaylord, MI	June 2	September 17

GOING UNDERGROUND

Nothing is as crucial to gardening success as having good soil. Unfortunately, a lot of people want to skip this less-glamorous step and move right on to the planting part. Fight the urge. The time and effort you put into making your soil the best it can be will really pay off in the long run in terms of healthier plants, more abundant harvests, and less overall maintenance.

SOIL TEXTURE

Soils typically have four components—sand, silt, clay, and organic matter. The proportions of these ingredients largely determine the soil texture, which in turn determines other soil properties such as fertility, porosity, and water retention. Heavier soils hold more moisture; sandy soils drain faster.

Sand and silt are the chief sources of minerals required by plants, such as potassium, calcium, and phosphorous. Silt particles are smaller and yield their minerals more readily than sand, making silt soils more fertile than sandy soils. Clay particles are the finest in size and a heavy clay soil has reduced pore spaces between the particles. These smaller spaces make it difficult for water, air, and plant roots to penetrate effectively.

Clay soils generally create the greatest problem for gardeners. They tend to stay cold and wet in spring, delaying planting and reducing seed germination. Heavy soils have poor drainage, which can lead to plants drowning due to lack of oxygen. Plants grown in poorly drained soils develop shallow roots and often the crowns will rot over winter. The best thing you can do to improve heavy soils is to add abundant organic matter. You can also use raised beds (see chapter 3).

Organic matter, also known as humus, is decomposing plant or animal material. It is an important component of soils and must not be overlooked. Organic matter determines a soil's capacity to produce nitrogen, supports the community of soil microorganisms crucial to plant life, and retains bacterial byproducts such as water and carbon dioxide. It also creates a moist, slightly acidic environment critical for the transfer of minerals from soil particles to plants.

A good place to start in understanding your soil is to have it tested by a soil-testing laboratory; check with your local university extension office for labs in your area. A soil test will provide you with information on existing soil texture, pH, and fertility, along with recommendations on what to add to improve it.



SOIL FERTILITY

Plants require fifteen or so nutrients for growth and survival. The big three—nitrogen, phosphorous, and potassium—are required in substantial quantities and their presence is used to generally define soil fertility.

Nitrogen ensures normal vegetative growth and a healthy green color. Deficiencies result in stunted plants with a yellowish green color. Excess nitrogen causes rank vegetative growth, often at the expense of flowering and a healthy root system. Nitrogen leaches out of soil easily, and as plants grow and remove nitrogen, more needs to be added to the soil. Phosphorus, important to flowering, fruiting and root development, is more stable in soils than nitrogen and doesn't have to be added unless soil tests indicate a deficiency. Potassium is essential for healthy development of roots and stems. It may need to be added to soils where plants are grown continuously.

Micronutrients necessary for healthy plants include magnesium, manganese, calcium, zinc, copper, iron, sulfur, cobalt, sodium, boron, and iodine. Since they are used in small quantities, most soils have enough for normal plant growth. Deficiencies do occur, however.

If your soil test indicates you are significantly lacking in any of these nutrients, you will want to amend your soil before planting. Your test results should tell you what to add to correct the deficiency.

SOIL pH

Soil acidity and alkalinity are measured in terms of pH on a scale from 1 to 14. A 7 on the scale indicates the soil is neutral in pH. Lower than 7, the soil is increasingly acidic; higher than 7, it is increasingly alkaline. Soil pH is important because it affects the availability of nutrients necessary for plant growth. Most nutrients are most soluble at a pH between 6 and 7. That is why most plants grow best in “slightly acidic soil.”

Most plants tolerate a range of soil pH, but some survive only within a narrow window. It is important to know what these plants are and to change the soil pH before planting them, if possible. It is possible to change soil pH after planting, but it's not as easy. You can raise soil pH by adding agricultural lime, calcium, or wood ashes (in moderation). To get the desired slightly acidic soil many plants require, lower the soil pH by adding pine-needle or oak-leaf mulch, organic matter, ground oak leaves, or sulfur (in moderation). Here again, your soil test results will provide you with specific amounts of each to add.



Good garden soil that is loose, friable, and rich in organic matter is the foundation for successful gardening. Take the necessary time to get it right before planting.



Iron chlorosis, a yellowing of foliage between the leaf veins caused by lack of available iron in the soil, can be a problem in alkaline soils.

THE RIBBON TEST

One way to get a basic idea of your soil texture is to perform a simple ribbon test.

- 1 Take a handful of soil and dampen it with water until it is moldable, almost like moist putty.



- 2 Roll the soil into a ball, as if working with cookie dough.



- 3 Using your thumb and forefinger, gently press the soil until the ball begins to roll out of your closed hand. The ribbon will begin to form, and will eventually break under its own weight. If the soil crumbles and doesn't form a ribbon at all, you have sandy soil.





4 If a ribbon more than one inch long forms before it breaks, you have silty soil.



5 If a ribbon 1–2 inches long forms before it breaks, you have clay soil.



6 If a ribbon greater than 2 inches forms before it breaks, you have very heavy and poorly drained soil. It will not be suitable for a garden without some major amendments.

EACH GARDEN HAS ITS OWN SOIL CONDITIONS

Your soil type may be completely different from your neighbor's; gardens close in proximity often have vastly different soil types, with different colors and textures from the outset.





It is difficult to add too much organic matter such as compost, especially if it is partly decomposed. A good goal is to add a layer to established gardens every spring.

IMPROVING YOUR SOIL

A big part of successful gardening is choosing plants that are well suited to your existing soil texture, pH, and moisture conditions. However, if your soil is deficient or has been drastically changed by construction or other factors, do all you can to improve it before planting.

Adding organic matter is the key to improving soil texture, fertility, and pH. Organic matter increases the aeration of clay soils and improves the moisture and nutrient retention of sandy soils. It adds valuable nutrients at a slow and steady pace, and it has a buffering effect on soil pH, helping to keep it in a desirable range.

The best source of organic matter for gardeners is compost. (For information on how to make compost, see chapter 7.) Other good sources of organic matter are composted manure and chopped straw and hay. Avoid using peat-based products as soil amendments. Not only are they expensive and not very effective, but the process of extracting peat from bogs is environmentally harmful to these natural habitats.

As with other amendments, the easiest time to add organic matter is before planting a bed. Loosen the soil with a spade or digging fork to a depth of at least 10 to 12 inches—more if possible. Spread a layer of compost or composted manure 2 to 4 inches deep over the entire bed. Use a fork to mix it thoroughly into your soil. If your soil is very heavy (high in clay), add 2 inches of sharp builder's sand along with the compost or manure. Sand alone will only make matters worse, but when it is added with organic matter to heavy soil, it does help loosen the soil.

CREATING A NEW GARDEN

Gardens fall into two basic categories: beds and borders. Freestanding island beds are intended to be viewed from all sides, so the tallest plants usually go in the middle and the smaller ones around the edges. However, don't be afraid to plant some taller "see through" plants around the outside. Beds are often in some sort of relaxed circular shape, but they can be square or rectangular. They can also be attached to a patio or found along a driveway or sidewalk.

Borders are designed to be viewed mainly from one side. They can have straight or curved edges and they can even turn corners. They are most effective when they have some sort of backdrop to set the plants off. This can come in the form of a fence, wall, or a row of taller, darker plants. Borders can be made up of all the same class of plant (i.e. perennial border, shrub border) or they can be mixed borders, containing perennials, annuals, bulbs, grasses, shrubs, roses, and small trees. Some people even include vegetables and herbs in mixed borders. Because of the diversity of their plants, mixed borders tend to look better year-round than gardens made up of only one plant type.

PROTECTING LARGE TREES

Be careful when preparing a new garden under a large tree. Disturb the soil as little as possible because digging can damage the tree's active surface roots. If you will be installing a garden right under a tree's canopy, it is best to dig an individual planting hole for each plant and add organic matter to the hole as needed, rather than till or dig up the entire area.



These free-standing symmetrical garden beds in the front yard contribute to this home's formal feel.