

# Overview

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People are part of the natural world. As such, they enjoy what appeals to their senses: the musk of ripe fruit, birdsong, leaves that tickle, flavorful herbs, or a burst of color. Do these scenarios pique your interest? If so, you are taking the right class! Through container gardening, you can connect with nature.

Many people think that limited space or vision impairment means they cannot garden. Neither is true. Any available space, no matter how small, can become a container garden. Possible locations include a balcony, front step, or patio. Many people who are visually impaired enjoy gardening. Consider the famous French painter, Claude Monet. He continued to garden and paint after he had lost most of his vision. With these facts in mind, the goal of this course is to give you the information necessary to plan, establish, and care for a container garden.

This course includes seven lessons. Lesson 1 identifies conditions that affect how plants grow. Lesson 2 explains how to choose plants, and Lesson 3 lists

necessary materials and tools. Lesson 4 outlines how to plant a container garden. Lesson 5 describes how to care for a container garden, and Lesson 6 gives examples of ways to manage plant problems. Finally, Lesson 7 offers some fun container-gardening projects. This course also features an appendix that presents U.S. information from the "United States Department of Agriculture (USDA) Hardiness Zone Map."

Although this course addresses you as a potential gardener, you are NOT required to plant a container garden. For the purposes of this course, you need only describe how to do so. Also, the ideas presented are suggestions that you can build on or adapt. One word of caution: do NOT attempt a project that you feel may place you in a potentially harmful situation. For example, do not use a chemical fertilizer before you thoroughly understand the product directions.

Much of this course discusses outdoor container gardening. Indoor gardening usually requires specific lighting and techniques. Therefore, in-depth information on indoor gardening is beyond the scope of this course. Due to variations in climate and plant life throughout

the world, this course focuses on container gardening in the United States. For specific information related to gardening in other countries, check online, your library, or with your Hadley instructor.

The review questions that follow each section are for your personal development only. Do not send responses to your Hadley instructor. Rather, check your comprehension by comparing your answers with those provided. You can always contact your instructor, however, to clarify concepts.

You are required to submit seven assignments, one at the end of each lesson. High school students must also complete the final project. The assignments and the final project enable your instructor to measure your understanding of the material presented in the lessons. Refer to your instructor's Welcome Letter for information about submitting assignments.

If you are ready to learn about container gardening, begin Lesson 1: Planning a Container Garden.



# **Lesson 1: Planning a Container Garden**

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Do you have a deck or a balcony? Perhaps you have an open area by your entryway? How many plants are you able and willing to care for? How much sunlight does your space receive? Before starting a container garden, you must put time into planning. In fact, most gardeners have better results if they are organized in their work. Lesson 1 identifies several factors that impact the growth of plants. This lesson describes the features of different garden spaces. It also discusses how certain aspects of the weather affect plants. Learning this planning process will give you the information necessary to plan, establish, and care for a container garden.

## **Objectives**

After completing this lesson, you will be able to

- a. describe features of different garden spaces
- b. identify weather factors that affect plants

## Key Terms

The following terms appear in this lesson. Familiarize yourself with their meanings so you can use them in your course work.

**fall frost date:** day on which the temperature begins to drop to freezing, or 32°F (0°C)

**gazebo:** structure in a garden or park that provides shelter and a place to rest; it has a roof and open sides

**growing season:** time period between the last spring frost date and the first fall frost date

**hardiness:** ability of a plant to survive outdoors without protection

**pergola:** structure composed of a series of columns with a trellis-like roof

**spring frost date:** day on which the temperature will no longer drop below freezing, or 32°F (0°C)

**trellis:** structure made up of interlaced strips used to support growing or climbing plants

## Location, Location, Location

As in real estate, location is a key factor in gardening. The first important step in planning a container garden

is assessing the available space. You can set up a container garden on a balcony or porch, or on a patio or deck. Other possibilities include steps or an entry. In general, an ideal space for plants offers you easy and safe access. Having seating next to the containers is also a good idea. It serves as a platform for tending plants. The remainder of this section addresses in detail possible locations for a container garden.

### **Balcony or Porch**

Tenants who live in apartments or condominiums often have this type of space. First, consider the weight-bearing capacity of your balcony. It must be sturdy enough to support containers and their soil, which can get quite heavy (think of a half-barrel full of soil). The side of the balcony along the structural wall, next to the building itself, is generally the strongest. As such, it is the safest place to set plants. If you are uncertain about a balcony's strength, consult with an engineer or the buildings department of your local government before starting a container garden.

Next consider whether the surface of a balcony or porch is watertight. Lower balconies that are not

watertight may flood when you water the plants. The water may cause your own porch or balcony to rot, making it vulnerable to collapse. If you are concerned about this, a tray or saucer under the containers may remedy this potential problem. A sheet of plastic or water-resistant shelving can also provide protection.

For renters, your landlord may restrict tenant use of the porches. If you live in a condominium, the homeowners' association may regulate these areas. Some buildings also have fire escape landings. Local laws often designate specific areas for emergency use only. Find out what you can and cannot do before starting a container garden in your building.

In terms of lighting conditions, balconies get direct sunlight only 25 percent of the day, that is, when the sun directly faces them. This is so because balconies form a rectangle, with an overhang and a long side that is the wall of the building. Position plants on a balcony so that they can take advantage of the available light. You can find where the sun hits your location by observation or by feeling the sun's warmth. Keep in mind that where and when the sun shines varies

throughout the year; you may want to periodically move your plants.

Due to their design, balconies often have a problem with wind. The gaps they form and the spaces between buildings trap winds, which can damage tender plants. This is especially true of balconies that are up high. For a simple solution, put flexible fencing or any suitable windbreak around the balcony's perimeter, or edge. Taller plants may even serve to shelter smaller ones.

Despite their shortcomings, balconies also have some advantages. They allow the gardener to keep the plants close at hand, making them easier to care for.

Several easy steps can enhance a balcony. Why not add a wind chime or small fountain? Either provides soothing sounds as you work on your container garden. Keep pathways uncluttered to prevent trips and falls. Once plants are in place, cut back any growth that falls into footpaths. Make sure the balcony is well lit. If you have usable vision and if your landlord, homeowners' association, or local law allows, paint the edges of any steps or rails in a contrasting color.

## **Patio or Deck**

The open exposure of a deck or patio often results in extra hours of sunlight for plants. More sun also gives gardeners more options of what to grow. However, plants need more water the more sun they receive. If tall trees surround a deck or patio, plants may spend most of their time in the shade. In either case, select plants that can grow in the given conditions.

A deck or patio is an ideal place to grow culinary herbs, fruits, and vegetables. The cook can easily select items to include in homemade meals. A deck can also serve as an outside room, and plants in containers become part of the furnishings. They can add fragrance, color, or both. They can also climb on a pergola or gazebo to create living walls and a ceiling, or grow on a trellis to cover an existing wall. A trellis is made up of crisscross pieces of wood, plastic, or metal, and it supports growing or climbing plants. Pergolas and gazebos are outdoor structures found in gardens or parks. They both have open sides, and a pergola has a trellis for a roof.

A patio or deck raises other considerations. To prevent trips or falls, use adhesive strips of a contrasting color and different texture to indicate where a deck or patio begins and ends. Make sure that these strips are securely attached to the ground. Or paint the edges of the patio or deck a contrasting color. As an alternative, use potted plants to indicate the transition between different surfaces. Raise all pots on feet, stands, or pieces of wood, so that any extra water runs off. As with a balcony or porch, make sure a deck is sturdy enough to support the weight of containers and soil.

Compared to a balcony, a deck has more available space and more exposure to the elements. So consider putting a water barrel on your deck. Rainwater is more desirable for plants than tap water, as it is softer and has more nutrients. You can use a heavy-duty plastic container or a commercially available rain barrel with a spigot, or faucet. Collecting rainwater makes your job easier, as you do not have to carry buckets of water from inside. If rainfall is minimal, you will still have to use water from other sources, as will be described in Lesson 5.

## Steps or Entryway

Plants are a great way to welcome guests to your home. Sighted guests can admire a visual display. For a striking effect, use plants of a single color. For example, yellow throughout the season might include tulips, golden sage, violas, summer squash, Golden Nugget tomatoes, marigolds, and apples. If your steps or entryway is shaded, try this green combination: hostas, ferns, coleus, impatiens, and vincas.

Equally appealing, containers filled with sweet-smelling plants allow visitors to enjoy the fragrance. Some culinary herbs that smell good when rubbed or brushed against are basil, rosemary, scented geraniums, English lavender, and lemon thyme. These herbs are ideal placed along a path or staircase. You might strategically place pots of flowers at face level in a window box or a hanging basket. Then fill them with scented flowers, such as gardenias, sweet peas, lilies, magnolias, daffodils, or roses. Resist combining too many varieties. Doing so may spoil the effect, as you won't be able to detect and appreciate the distinctive scent of individual plants.

When considering how much sun your entryway receives, note any overhanging roof or eaves. These structures may result in shade, even if your front yard or backyard faces south. They might also block rainfall. In this case, water your plants more frequently. Use these structures to your advantage: hang potted plants from them. An outer door or the space above or to the side of a garage door can also support potted plants. Lesson 7 explains how to grow plants in a hanging basket.

For stairways, choose plants that will not block the pathway; that is, avoid plants with large branches. Instead, use low-growing plants, like the culinary herbs mentioned earlier. Also, secure pots to a nearby rail, post, or other anchor. This may prevent them from being in the way of or possibly tripping people who walk by. Choose low, wide containers that resist being tipped over. For further safety, adequately light entryways. If you have usable vision, paint or tape the edges of steps and handrails in a contrasting color. If you use tape, make sure that it is securely fastened.

## Section Review

Indicate whether the following statements are true or false. If the statement is false, reword it to make it true.

1. Balconies get direct sunlight at least 75 percent of the day.

False. Balconies get direct sunlight only 25 percent of the day, that is, when the sun directly faces them.

2. The open exposure of a deck often allows plants to receive extra hours of sunlight.

True

3. An overhanging roof or eaves will not affect the amount of sun that plants in an entryway receive.

False. An overhanging roof or eaves may cause plants in an entryway to be in the shade and receive less sunlight.

So far, this lesson has described the features of potential garden spaces. These spaces include a

balcony or porch, a patio or deck, and steps or an entryway.

## **Weather Conditions**

This section discusses how specific aspects of weather affect plants. These include climate, sunlight, water, and wind. You can find this information for your geographic area from the following sources:

- your senses
- newscasts, radio shows, or newspapers
- garden centers
- botanic gardens
- horticulture departments at local universities
- online seed catalogs
- gardening Web sites
- a friend, neighbor, or family member who gardens

The following pages describe the weather factors to consider before you start a container garden.

### **Climate**

Consider the climate in your area. Are your summers dry or humid? How long and cold are your winters? Different plants thrive in different climates. Cacti like

the heat and dryness of semiarid areas. Palm trees need lots of heat and water. Each plant has a minimum temperature range in which it can survive outside during the winter. Once you know the temperature range for your area, select plants that can tolerate those temperatures.

The U.S. Department of Agriculture (USDA) has developed eleven zones or ranges of minimum temperatures. The USDA displays them on its "Plant Hardiness Zone Map." For this map, hardiness means a plant's ability to survive outdoors year-round without protection. This map covers all of North America. Average minimum winter temperatures range from  $-50^{\circ}\text{F}$  ( $-45^{\circ}\text{C}$ ) in Zone 1 to  $40^{\circ}\text{F}$  ( $5^{\circ}\text{C}$ ) in Zone 11. In other words, a higher zone number means a warmer climate. In the United States, the horticulture industry uses this map to indicate which climates a plant can tolerate. Along with water and light requirements, this information is part of a plant's description. See the course Appendix, which presents some of this map's information pertaining to the United States.

Other countries, such as Australia and England, also have hardiness maps. You can find these maps on the Internet. If your country does not have a hardiness map or if you do not have access to the Internet, you can still determine what grows well in your region. Refer to garden stores, the Internet, and the other sources listed at the beginning of this section, or ask your Hadley instructor.

Keep in mind the benefits of container gardening. During the winter, you can grow plants that are not hardy in your area by planting them in containers and storing them indoors, or in any sufficiently warm spot. Also, most reputable garden centers and nurseries stock only material suited for the local climate. Plants offered in catalogs, however, may be meant for various areas and are not necessarily suitable for your region.

Many plants cannot withstand hot summers. Sellers frequently indicate how much heat a plant can tolerate. The American Horticulture Society (AHS) has produced a Plant Heat-Zone Map. It designates the average number of days per year throughout the United States that temperatures exceed 86°F (30°C). This is the

point at which plants begin suffering damage from the heat. As with extreme cold, extreme heat can adversely affect many plants. Look on the Internet for contact information for AHS, or ask your Hadley instructor.

When planning your garden, consider the first and last frost dates and determine the growing season in your area. The day on which the temperature will no longer drop below freezing, or 32°F (0°C), is called the spring frost date. The day on which the temperature begins to drop that low is called the fall frost date. The growing season is the time period between the last spring frost date and the first fall frost date. In the spring, set delicate plants outside only after the temperature will no longer drop below freezing. In the fall, take your plants inside before the temperature drops to 32°F (0°C). At this temperature, the air is cold enough to kill tender plants. To find information for your geographic area, refer to the sources at the beginning of this section or contact your Hadley instructor.

## **Sunlight**

Plants require different amounts of sunlight. Sellers generally label plants with their needs: full sun, part sun, or shade. Your first task is to determine how much sunlight a garden space receives. This amount largely depends on which direction your gardening space faces. Assuming no obstructions, a southern exposure receives full sun for at least 6 hours per day. Eastern and western exposures receive partial sun, or 4 to 6 hours of sun per day. Eastern exposures receive sunlight in the morning, whereas western exposures receive it in the afternoon. A northern exposure receives the least amount of light and is considered shaded.



Some sellers also categorize the light requirements for plants in terms of shade. *Light shade* means a slight pattern of shade all day. *Partial shade* means dappled, or spotted, shade all day. For example, if a plant is near a tree, the tree's branches may cast shadows so that the plant is partially in shade, partially in sun. The

phrases “partial shade” and “partial sun” are interchangeable. In full shade, a plant receives only reflected or indirect sunlight. Also note any obstructions to sunlight. For example, trees surrounding a patio might create shade where you would have expected full sun.

A key ingredient to your success as a gardener is choosing plants that match your light conditions. Even a well-cared-for plant that needs full sun cannot survive in a shady entryway. One benefit of container gardening is mobility. If you want to grow a certain plant, move it to a spot with proper light conditions. You can increase available light by using reflective materials such as aluminum foil, a mirror, white-painted surfaces, or marble chips, around plants. If possible, regularly turn your plants so they face different directions. This allows them to get light on all sides.

## **Water**

Plants vary in their need for water. Some love water; others prefer dry or moderately dry soil. You will be more successful if you use the same container for plants that need similar amounts of water. You can find

a plant's water requirements in its description from the seller.

Keep in mind some general rules about plants and water. Plants need more water under these conditions:

- during fast growth
- during high sun exposure
- during the hot summer months
- when shielded from rainfall

Even if plants receive water from rainfall, you must provide the rest. Unlike plants in the ground, those in containers cannot reach out their roots for water when thirsty. Plants growing in containers need up to three times more water than those growing in a deep living soil. When choosing plants, consider their water needs, the amount of rainfall in your area, and how much time you can devote to watering them.

As mentioned earlier, if space permits, consider using a rain barrel. Recall that rainwater is better for plants than tap water. The type of container you use for your plants also matters. Unglazed terra-cotta pots dry out more quickly than glazed ceramic ones. Plastic containers work best to retain water. Avoid black

plastic, which attracts damaging heat to plant roots. Lesson 3 discusses various types of containers in detail.

## **Wind**

Other weather factors also play a role in container gardening. Wind can dry out plants or blow them over. If your area is windy, avoid top-heavy containers with tall plants. If possible, attach containers to a wall with a strong wire or chain. Use heavy containers. For lighter ones, place rocks at the bottom to increase stability. However, the extra weight may cause a problem if you plan to move plants or if your space is not sturdy enough.

Create a windbreak with a trellis or mesh screen or any porous material that slows wind but allows it through. Another option is to grow plants that are more wind-resistant, such as shrubbery. These plants also serve to protect more vulnerable ones. Use stakes to support any tender plants. Finally, be prepared to water your plants more frequently. Even mild breezes can have a drying effect on soil.

## Section Review

Indicate whether the following statements are true or false. If the statement is false, reword it to make it true.

1. The growing season for plants is the time between the last spring frost date and the first fall frost date.

True

2. Leafy plants usually require less sun than flowering ones.

True

3. Plants need the same amount of water year-round.

False. Plants need more water during the hot summer months.

4. Plants growing in containers need the same amount of water as plants growing in the ground.

False. Plants growing in containers need up to three times more water than plants growing in the ground.

5. Wind can dry out plants or blow them over.

True

Clearly, many factors affect a plant's growth. These include climate, sunlight, water, and wind. To improve your chances for success as a gardener, find out all you can about the plants that interest you. Then choose plants that match the conditions you can provide. The next lesson gives guidelines to help you help select appropriate plants.

## **Summary**

This lesson explained how to plan your container garden. It described different types of garden spaces. It also discussed how weather affects plants.



# Assignment 1

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For general instructions on completing assignments, refer to the Welcome Letter. Then start this assignment by giving your full name, address, and phone number. Also list the name of this course, Assignment 1, your instructor's name, and the date. Be sure to include the question number along with each answer. This assignment is worth 100 points.

## Multiple Choice

Select the best item to answer each of the following questions. (50 points total, 5 points each)

1. Which of the following is an advantage of using a balcony or porch for container gardening?
  - a. It gets direct sunlight most of the day.
  - b. It gets little wind.
  - c. It allows the gardener to keep plants nearby.

2. Where is the safest place to put plants on a balcony to make sure it can hold their weight?
  - a. the side by the structural wall
  - b. the edge by the railing
  - c. in the middle
  
3. What can you add to the edges of a patio or deck to prevent falls?
  - a. adhesive strips of a contrasting color and texture
  - b. adhesive strips of the same color and texture
  - c. plants with large branches
  
4. What is a good use for an overhanging roof or eaves by an entryway?
  - a. Put plants underneath them.
  - b. Hang potted plants from them.
  - c. No good use exists for overhanging roofs or eaves.

5. What is a good precaution for growing plants in an entryway?
  - a. Grow plants with large branches.
  - b. Attach containers to a nearby rail, post, or other anchor.
  - c. Use containers that are tall and narrow.
  
6. What does hardiness mean for a plant?
  - a. how long it lives
  - b. how big it grows
  - c. its ability to survive outdoors all year without protection
  
7. When can you set delicate plants outdoors?
  - a. after the spring frost date
  - b. after the fall frost date
  - c. after the temperature begins to drop below 32°F (0°C)
  
8. If no obstructions are in the way, which direction receives full sun?
  - a. northern exposure
  - b. eastern exposure
  - c. southern exposure

9. Which type of pot is best to help plants retain water?
- a. unglazed terra-cotta
  - b. plastic
  - c. glazed ceramic
10. How can you prevent plants from falling over when it's windy?
- a. Use top-heavy containers with tall plants.
  - b. Use heavy containers, or place rocks at the bottom.
  - c. Water less frequently.

### **Short Answer**

Read the following scenario, and then answer each of the questions in a brief paragraph or list. (50 points total)

Juanita wants to start her own container garden, but she has never grown any plants before. She lost her vision two years ago, received rehabilitation training, and has recently gone back to school. She now wants to try a new recreational activity. She thinks it might be fun to grow some flowers and herbs for their

aromas, and to grow vegetables and herbs for cooking. She has a back porch and some space by her front door that she'd like to use.

11. Consider the two spaces that Juanita has available for container gardening. For each space, give two features that make it a good place for a container garden. (20 points)
12. Name two aspects of weather that affect container gardening. For each of these aspects, give two details for Juanita to consider before starting her container garden. (30 points)

When you have completed this assignment, proceed to Lesson 2: Choosing Plants.