



GROWING PLACES **GROWING GUIDE**

Making the Most of Your Raised Bed Garden

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ACKNOWLEDGEMENTS

WE ARE PLEASED TO PROVIDE YOU WITH A COPY OF OUR GROWING GUIDE!

We hope you are eager to get started with your vegetable garden. Inside this guide you will find some helpful information about planning, planting, watering, pest control and fertilizing. A thorough reading of this guide will undoubtedly enhance your gardening experience. This is a work in progress and as such is subject to change. If you have any suggestions to offer, we would be very happy to hear them. We want this to be as useful to you and other future gardeners as possible.

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WHO WE ARE

At Growing Places, we believe in the power of gardening to improve lives. We help low-income individuals, families and communities realize the many health, economic and social benefits of growing their own produce by building food gardens and the skills to maintain them in low-income communities in North Central Massachusetts. Each garden is designed based on needs and for sustainability, and is built by a team of volunteers.

HOW TO USE THIS GUIDE

The subjects covered in this guide are organized into three main parts, each reviewing a major aspect of maintaining your new Growing Places garden.

Part 1, “Gardening with Growing Places,” discusses how raised-bed gardens stack up against traditional in-ground gardens and how to practice the square-foot gardening method. It also provides instruction in the basic skills you’ll need to maintain your vegetable garden once it’s planted, like soil care, weeding, watering and mulching.

Part 2, the “Plant & Pest Guide,” offers in-depth information on how to plant, tend, harvest and prepare each vegetable, herb and flower variety Growing Places will provide you (plus even a few more!). This section also offers a pest identification guide for some of the most common pests in the region.

Following the chapters, you’ll find some useful information in the appendices:

Appendix A is our glossary. If you come across a technical gardening term you don't recognize, here's where you'll find its definition.

Appendix B contains sample crop rotation plans to give you ideas while planning your spring garden.

Appendix C is the plant compatibility chart, which lists which plants grow well near each other.

Appendix D identifies which vegetables belong in which plant family—important garden planning information to help you avoid planting the same plant family in the same place two years in a row.

Appendix E is a planting schedule to assist you in planting in succession.


Appendix F provides a list of common garden tasks organized by season.

Appendix G contains blank planning grids for use in planning this and later year's gardens.

Appendix H offers space for your garden journals. This is the place to jot down questions and observations about your garden's growth during the year and thoughts about what you might try next year.

EXTRAS

Scattered throughout this guide, you'll find tidbits of information intended to make the task of gardening even easier. These include:

 **DEFINITION**


Sometimes gardening can get technical. Here you'll find the meaning of these special words and phrases unique to gardening.

 **GARDENING TIPS**

These are helpful pointers or suggestions to make gardening straightforward, fun and easy.

 **WISE WORDS**

Gather garden-tested wisdom and fresh advice from experienced green thumbs.

 **SAFETY FIRST**

When safety is a concern, look here for important considerations or directions for staying out of harm's way.

PART 1

GARDENING WITH GROWING PLACES

For even the most experienced green thumb, gardening is all about trial and error. As a member of Growing Places' garden program, we give you a head start by recommending some tried-and-true gardening techniques that are sure to produce happy, healthy, harvestable gardens. In Part 1, we'll take a look at raised-bed gardens and the square-foot gardening method. We'll also review what you can expect from your time as a Growing Places gardener and the basic garden maintenance tasks you'll use throughout the season.



CHAPTER 1

RAISED BED GARDENS

IN THIS CHAPTER

- What Makes It A Raised Bed?
- Benefits
- Things to Keep in Mind

Raised beds are Growing Places' garden of choice, particularly for beginner gardeners, but you may be wondering why that is. Plenty of gardeners dig right in the ground and others produce beautiful vegetables out of nothing more than a few pots. Whether you are working in an in-ground garden, tending containers on your porch, or working in raised beds, knowing how the structure of your garden affects the way it performs will help you garden more successfully.

WHAT MAKES IT A RAISED BED?

A raised-bed garden is nothing more than a plot of soil that is raised up above the natural soil level. In fact, a raised bed can be created simply by mounding soil somewhere on your property, but unless the beds will

SAFETY FIRST

Although research is still inconclusive, some suggest treated woods may leach toxic chemicals into the soil. Until further research can be conducted, it's best to avoid treated lumber, including pressure-treated, when food gardening.

be located within a large-scale garden plot, typically it's more effective to contain the soil inside a frame to help prevent soil loss. While raised-bed frames can be constructed from many different kinds of materials—brick, concrete, plastic, even sand bags—Growing Places has chosen untreated hardwood for its frames. Wood frames are simple to construct, easy to install (or reinstall if need be), food-safe and biodegradable.

BENEFITS

The benefits of raised-bed gardening are many—far outweighing the few special considerations you'll need to keep in mind. Because raised beds are, by definition, above ground, they tend to warm up quicker in spring-time, allowing you to get a slight jump on planting. You also have

the luxury of ignoring any concerns you may have about the soil in your yard because the raised-bed frame can be filled with an ideal soil mix. Growing Places will provide you with roughly 1 cubic yard of compost per bed, mixed with vermiculite to improve drainage and chicken manure as an organic

fertilizer. Despite the rich soil, weeds are easier to keep under control in the contained space and, depending on the height of your bed, require less bending over to pull them. On top of it all, the precise measurements of the raised bed make square-foot gardening easy.

THINGS TO KEEP IN MIND

You may be wondering, with all these positives, just what are the negatives? The biggest consideration is tied to ensuring raised beds' good drainage: you'll need to water—or at least check the soil to see if it needs watering—a bit more frequently than you would with traditional garden beds. As a member of the Growing Places program, the other typical concern with raised beds, the initial cost, has been removed for you.

As with all gardens, the soil will need regular amending to keep it healthy, and the frames, if wooden, will need eventual replacement. Growing Places hardwood frames last up to 5 years, and redwood frames can last up to 10! Frames constructed from other less-degradable materials like brick or stone can be permanent additions to your yard.

If you would like to construct your own wood frame, below you'll find the method and the materials Growing Places uses.

FRAME BUILDING

Step 1: Preparing 8-foot boards with Framing Angles installed

Materials

- (3) 2-inch x 8-inch x 8-foot boards [Cut, or have one board cut into two four-foot boards.]
- (4) framing angles
- (24) #8 x 1¼-inch wood screws

Tools

- (1) DeWalt 12v cordless power drill
- (1) 3/32 drill bit
- (1) Phillips-head screwdriver bit

Examine the wood for flaws and damage. The goal is to have solid square ends for corners.

Look at the wood grain. If there are growth rings showing, have the open end of the ring arc facing inward when the frame is constructed. However, if this will result in a damaged top edge on any corner omit this step.

Mark the board with “Top” to indicate the correct orientation.

Using the pre-fabricated L & R patterns for the framing angles, mark and drill three holes, which will be used to attach one A35Z angle to each end.

Attach an angle to each end, and you are done! [Note: using the pre-fabricated L & R patterns assures that the angle has the open end down. This allows for any adjustment that may be needed when putting the frames together if the boards are warped.]

Step 2: Assembling the frame**Materials:**

- (2) 2-inch x 8-inch x 8-foot boards, angles installed
- (2) 2-inch x 8-inch x 4-foot boards
- (4) 1½" x 6" nail stoppers
- (20) #8 x 1¼-inch wood screws;

Tools:

- (2) 5-foot pipe clamps
- (1) DeWalt 12v cordless power drill
- (1) 3/32 drill bit
- (1) Phillips head screwdriver bit
- (1) 12-foot tape measure
- (1) black magic marker
- (1) hammer
- (1) mallet

Take the two angle-mounted 8-foot planks and two 4-foot planks to a clear construction area. All planks should be marked with "Top" on one side for orientation.

Set the two 8-foot planks on edge with "Top" up and the planks facing each other. Now place one 4-foot board between the ends of the 8-footers fitting them up against the installed angles. Use the 5-foot pipe clamp to hold the boards together by placing it across the outside of the ends and tightening the clamp.

Now place the other 4-foot board in a similar fashion at the other end of the 8-foot boards. Place another 5-foot pipe clamp on each corner and tighten to hold the ends securely. You now have a rectangular box.

Starting at one end, look to see if the ends are squared up with one another and, if not, adjust them with the hammer. In one corner, drill three holes in the 4-foot board using the angle for a guide. Starting at the top hole, attach the bracket to the 4-foot board using wood screws. Do the same for the other corner of the frame. [Note: If it appears that the boards are not snug after putting in the top two screws, loosen the pipe clamp, move it to the bottom of the 8-foot boards and tighten again. This will draw in the warped boards. Now screw in the final screw to secure the ends.]

At the other end of the frame, start at one corner and drill three holes. Again, using wood screws, attach the corner bracket to the 4-foot board. Now do the same for the last corner of the frame, again watching for a snug fit and using the pipe clamp if needed.

Place a nail stopper on top of the adjoining corners, making sure the edges of the nail stopper do not stick out anywhere over the edge of the board. This is to prevent gardeners from getting cut on the edge of the tie. Hammer the tie into the wood to secure it and then using the power drill put in screws in each of the holes at the ends of the tie. You will not usually need to pre-drill these two holes. Do the

same for each of the remaining three corners.

Finally, using a magic marker and a tape measure mark off 1-foot lengths on each of the tops of the four sides of the frame. Make sure to start measuring in the same place for each side so that marks will align with one another. When installing the frame outside, add nails at these marks and loop string around the nails to designate areas for square foot planting.

Congratulations! You have now completed an 8-foot x 4-foot frame!

CHAPTER 2

SQUARE FOOT GARDENING

IN THIS CHAPTER

- How is Square Foot Gardening Different?
- Spacing
- Planting

When you think of a garden, do you envision long rows of vegetable plants, one after another? Traditional row planting is often the first type of garden to come to mind for beginning “green thumbs.” However, to maximize space and to make garden planning as easy as possible, Growing Places teaches the square foot gardening method. Here we’ll explain what makes this method different and its rules for spacing and planting.

HOW IS SQUARE FOOT GARDENING DIFFERENT?

Square foot gardening was developed by Mel Bartholomew in the late 1970s with the goal of producing more harvest in less space with less work. You will notice that we have divided your beds with twine into 1-foot-by-1-foot squares. Using this method of gardening, each square may be planted with a different vegetable, herb, or flower, or, if you want a lot of something, you may plant several squares of the same item. You can easily plant, clear and replant a single square throughout the season without disturbing other areas of your garden. Each square can be managed simply and independently.

We have also provided you with wooden markers onto which you can write the name of the crop planted in each square. Labeling what you have planted will help you remember the location of plants, even if the sprouts are not yet visible. Labeling will also help you plan a crop rotation. To avoid depleting the soil of nutrients, the same plant should not be planted in the same square two years in a row.

SPACING

Because one of the goals of square foot gardening is maximizing space, plants are placed as closely together within a square as possible. The number of seeds or

DEFINITION

Crop rotation is a planting technique that involves avoiding planting vegetables from the same plant family in the same spot two years in a row in order to preserve the nutrients in the soil.

seedlings placed in each square depends upon how large the particular variety of plant you are growing will get when mature. For example, a broccoli plant needs much more room to grow in a square than a bean plant.

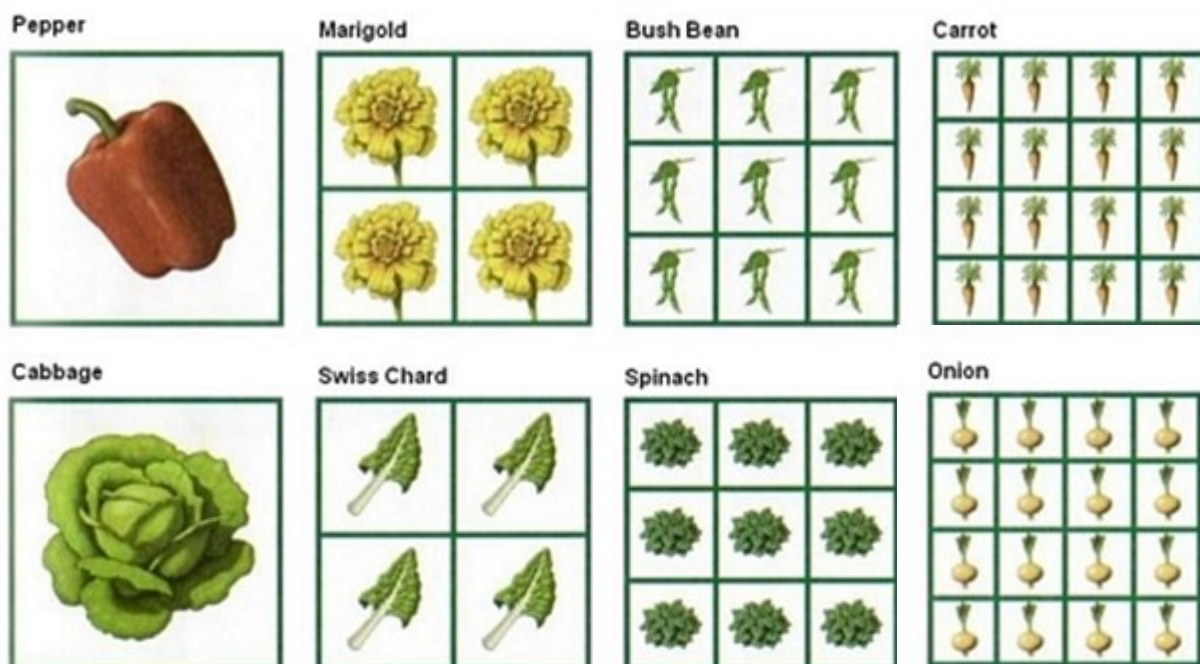
Seed packets always indicate how far apart you will need to space your plants for proper growth. However, often they include a step called thinning, which is the process of removing the scrawniest seedlings in order to leave more space for the stronger ones. For example, the seed packet may instruct you to sow your carrot seeds 2 inches apart, but later thin them to 3 inches apart. In square foot gardening, the step of thinning is removed and seeds are sown at the thin-to distance from the start. In the example of the carrots, this would mean sowing them 3 inches apart. Not only does this save you the work of thinning, but it also reduces the amount of seed that is wasted.

For detailed information on spacing, refer to **Part 2: Plant Guide**.

PLANNING

To plan your garden, begin by thinking about the kinds of food you and your family like to eat. Making a list can help you prioritize which vegetables you would most like to grow. Think, too, about how much of each crop you would like to harvest. Since space is limited, you will also want to pay attention to how much room each crop requires. Mature plants come in several different sizes depending on the crop. Extra-large crops, like squash and tomatoes, will require one or more squares in your garden. Large plants can be spaced more closely together, with four plants sharing a single square, whereas small plants can fit 9 to a square. The smallest plants, such as carrots or radishes, can fit up to 16 plants per square, because they require even less space for growing.

The chart below illustrates examples of extra-large, large, medium and small crop spacing requirements. **The Plant Guide** in **Part 2** outlines the specific planting guidelines for many popular vegetables, herbs and flowers, including those varieties supplied by Growing Places.



COMPANION PLANTING

While you are planning your garden, it is helpful to know that some plants grow well near each other and others do not. The plants that like to grow alongside each other are what we call compatible, or companion, plants. Each plant has its own set of companions that will help it grow better than it would have on its own. Companion plants help plants grow larger, produce more vegetables, or even taste better. In some cases, they can also deter pests. They can be planted in squares next to each other or, if there is room, together in the same square.

Of course, some plants simply are not compatible with others and will cause them to grow poorly if placed nearby. They should not be planted together and, if possible, should be planted in different beds altogether. Otherwise, they should be spaced at least four squares away.

For a detailed chart of plant compatibilities, refer to **Appendix C**.

SUCCESSION PLANTING

Once a garden begins to produce harvestable vegetables, you may find it difficult to prepare and eat everything as it ripens. To make consuming a harvest more manageable, gardeners often use small, successive plantings. Lettuce is a common example.

Instead of planting four squares of lettuce all at once and committing your family to salad three meals a day, you might plant a single square of lettuce every two weeks for four weeks. With the plantings spaced out this way, the harvest is also staggered, providing you with a smaller amount of lettuce over a longer period of time.

Keep an eye on the planting calendar for your hardiness zone when planning successive plantings. Some plants prefer cooler weather and will not grow well if planted during the heat of summer. For a chart that maps out when different crops can be sown or planted in USDA hardiness zones 5b and 6a, see **Appendix E's Planting Schedule**.

Taking companion planting into account and leaving room for successive plantings, start your garden plan on blank planning grids, one for each raised bed (**Appendix G**).

Map out what you will plant in each square or group of

squares, using the **Plant and Pest Guide** to help you determine spacing. Start in pencil, as you may want to make changes while you work. Remember to plant a variety of crops that you enjoy and avoid overplanting any one crop. When you are done, hang on to your plan so that you can make note of any changes you make during the season; then you can use it to help plan next year's garden.

PLANTING

Now you're ready to get started planting! Gather up your seeds, seedlings, tools, watering can and garden plan and head out to the garden.

All your plants will either be started as seeds or as young seedlings. Seeds are sown directly in the soil; seedlings must be transplanted from their containers into the garden. Some vegetable varieties, such as tomatoes, are more difficult to start from seed, and therefore are usually started as seedlings. Other

DEFINITION

A **hardiness zone** is a geographic region in which specific crops are capable of growing based on the weather. The majority of North Central Massachusetts is in USDA plant hardiness zone 5b or 6a, but <http://planthardiness.ars.usda.gov> can tell you for sure which zone your garden is in.

varieties, like beets or other root crops, dislike being disturbed once they've been planted and are best started from seed in their desired location.

HOW TO SOW SEEDS

Sowing seeds in a square foot garden is a simple and straightforward task. You will need to mark the spots where you will sow your seeds, determine how deep to sow, and then physically plant and cover the seed. It's important to place your seeds below a moist surface to prevent them from drying out as they grow, so you may need to water your soil lightly before you begin, if the soil is dry.

As a general rule, seeds are planted at a depth about three times their size. Tiny lettuce seeds, therefore, are covered with a barely-there layer of soil, whereas sturdy squash seeds can be planted $\frac{1}{2}$ -1 inch deep. Seed packets will give directions or you can refer to the **Plant Guide** in **Part 2** for seed sowing depths.

STEP 1: SPACING



FIGURE 3.1 Extra large plants = 1/square

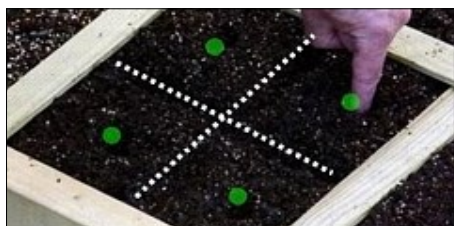


FIGURE 3.2 Large plants = 4/square

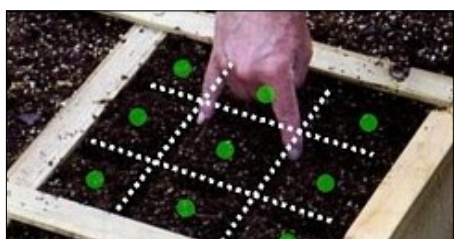


FIGURE 3.3 Medium plants = 9/square



FIGURE 3.4 Small plants = 16/square

Determine the spacing requirements for the seed variety you are about to sow. This may already be jotted down on your garden plan. If not, refer to the **Plant Guide**.

Extra-large plants (1 square per plant) should be planted in the center of the square or group of squares, **Fig. 3.1**.

For large plants (4 per square), divide the square into four equal sections by drawing a cross; plant in the center of each smaller square, **Fig. 3.2**.

For medium plants (9 per square), take your pointer and pinkie fingers and draw two lines horizontally across the square, dividing the square into thirds. Repeat vertically so that you have nine equal sections. Plant in the center of each section, **Fig. 3.3**.

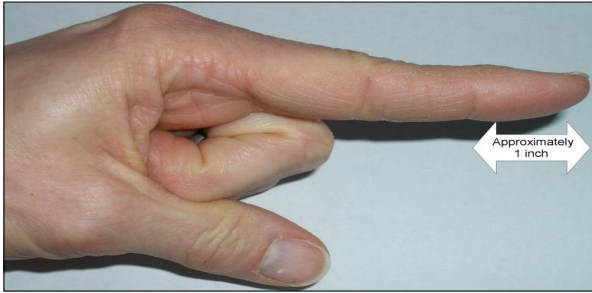
Small plants are planted approximately 3 inches apart, 16 per square. Once again, divide the square in quarters by drawing a cross with your finger. Then, using your pointer and middle fingers to make two shallow holes in the soil at a time, make four holes in each section, **Fig. 3.4**.

Some crops, such as zucchini and tomatoes, are special cases that require more than one square. Refer to the **Plant Guide** in **Part 2** for instructions on how to handle each case.

STEP 2: DEPTH

Now that you have marked where the seeds will go in the square, you will need to know how deep to plant your seeds. Since we are rarely equipped with a ruler when we go out to plant seeds, it's helpful to know that the length of your index finger from the first knuckle to the tip is approximately 1 inch. So just use your own finger as a guideline! Some

gardeners use a specialized tool called a planting dibble, shaped like an upside down ice cream cone,



made of wood and marked in inches to allow easy measuring. These can be obtained at specialty garden shops or purchased online. That said, your finger arguably works just as well. Adjust the depth of the indentations you've already marked so that they are the depth your seed variety requires.

STEP 3: PLANTING

Normally, one seed per hole is all you need. However, you may find it difficult to pick up just one seed, especially with small, unusually shaped seeds. In that case, a pinch – two or three seeds – is just fine.

Cover the seed(s) lightly with soil and tamp down gently to bring the seed(s) in contact with the soil. Be sure to water them gently right after you plant them. Some of the seeds are so small and so close to the top of the soil that a stream of water from a cup or a hose might wash them away, so water as gently as possible. Keep soil moist — not soaking — as seeds germinate.

Approximate seed-germination times for each crop are listed in the **Plant Guide**. If a sprout does not appear after the specified time, wait a bit longer (a few days to a week, depending on weather, temperature, etc.) and, if nothing has grown, replant that crop.

If more than one seedling sprouts, take a pair of small scissors and carefully snip off at the base all but the strongest one.

STEP 4: REPEAT

For each crop you are planting, repeat Steps 1-3.

STARTING SEEDS INDOORS

In your second year as a Growing Places gardener, we suggest you try starting your own seeds indoors, which will produce your very own seedlings in time for a spring planting. If you feel like giving this a try, go ahead and see what happens. Don't be put off by failures; everyone has them. In fact, this project can be a lot of fun, especially if you have children who might like to participate.

First, collect the supplies you'll need. These can all be obtained at your local nursery or Agway. Many stores offer seed-starting kits, which are especially convenient and often adaptable to your needs.

Supplies

- Containers
- Sterile soilless mix (Or seed-starter mix—looks like soil, but is a mixture of peat mosses, compost and perlite)
- Trays for holding plant containers (Any kind of tray will do.)
- Sunny window, south-facing, to give maximum hours of sunlight; or a set of fluorescent lights (A shop light works well.)
- Clear plastic bags or other clear covers

Instructions:

1. Refer to individual seed packets for the best time to start seeds indoors.
2. Fill containers with soilless mix to 1/2 inch below the top. Moisten the soil, without making it soggy.
3. Plant 4 or 5 seeds per container and cover lightly with more soilless mix to the depth listed on the back of the seed packet.
4. Place the containers in a clear plastic bag or other plastic cover and place in a warm area out of direct sunlight (65-75 degrees F). Check daily, making sure soil never dries out (but don't make it soggy!)
5. When seedlings emerge (germinate), remove the plastic covering and place the containers in a sunny window on a tray in a cool room (60-65 degrees F is ideal, but not necessary). When watering, you may water from below or above, but don't leave the container sitting in water for more than 10 minutes. Pour off any water left in the tray. Keep moist, but not soggy! Between watering, allow the surface of the soil to dry. Turn trays every day to even their growth.

If using a shop light and fluorescent tubing, seedlings should be placed about 4 inches away from the tubes. The setup should be placed in a cool area about 65 degrees at night. 12-14 hours of light per day is enough; plants need some dark to grow properly.

6. Thin to one plant per container about one week after the seeds germinate, keeping the biggest and strongest plant and gently cutting off the other ones.
7. Begin fertilizing with a liquid fertilizer diluted to 1/4 strength every other watering. Fertilizer can be found at local garden stores.
8. After a couple weeks of growth, brush your hand across the seedlings every day to toughen the stems of the plants.
9. About one week before planting (again, refer to individual seed packets or a planting schedule for earliest transplant date) start putting seedlings outside for about 1-2 hours of filtered sunlight. Then place them in shade for the rest of the day. Increase sun exposure time over a couple of days before putting them into direct sun for a couple hours per day. By 7-10 days, they should be ready to be planted. Make sure there is no frost in the nighttime forecast if you intend to leave your seedlings outside; if there is, bring the seedlings in at night. Check the soil moisture, since outdoor conditions will dry the soil out faster—keep moist, but not soggy!
10. Transplant your seedlings into the garden in late afternoon or on a cloudy day. Water well at soil level and avoid wetting the foliage if possible.

GARDENING TIPS

Container Suggestions: ½ pint to quart-size milk, juice, yogurt or cottage cheese containers; plastic food trays. **Be sure to punch holes in bottoms!**

Make Your Own: Rolled-up newspaper can be placed directly in soil at transplant time. To make containers, use a soup-sized can as a mold; roll 1 or 2 layers of newspaper around a can making sure it overlaps the bottom of the can. Fold paper together at the bottom of the can, remove and tape side and folded bottom. Fill tubes with soilless mix, and place together in trays to help give them support.

For detailed information on when to start and transplant seedlings in your zone, check the seed packet or refer to **Appendix E, Planting Schedule**. Remember, all these are simply guidelines; a week or so more or less will not make a big difference.

TRANSPLANTING SEEDLINGS

If you are a first- or second-year Growing Places gardener, you will receive a variety of seedlings ready for transplant. Your cool-weather crops, such as lettuce, broccoli and kale, will arrive in April while your warm-weather crops, like tomatoes, cabbage, and eggplant, will arrive in May. You are welcome to plant additional seedlings that you have started yourself or have purchased from local farms or garden centers. Be sure to check the spacing requirements and save room for them when planning your garden.

The process of moving a seedling from the container in which it was grown into a prepared garden bed is called transplanting. Before you begin, make sure the soil in the garden square and the soil in the seedling's original container are moist. Then, dig a hole in the soil slightly larger than the seedling container (usually a plastic 4- or 6-pack). Carefully pry the entire plant and its surrounding soil out of the container. If you see a clump of tangled white roots at the bottom of the root ball, gently loosen the roots with your fingers. Carefully place the root ball, roots down, into the hole, and fill it with soil, lightly patting it into place. Try to keep the leaves dry to prevent disease and fungus, and keep the soil moist as the plant gets used to its new home.

Newly transplanted seedlings and plants often suffer from shock and can look slightly wilted for a couple of days, but will perk up shortly after. To lessen the shock, transplant on cloudy days, in late afternoon, or early in the morning when the sun is still low.

GARDENING TIPS

Do your best not to compact the soil by walking in it or stepping on it.

To make sure that gardeners can reach the plants in the center of their beds without stepping in the garden, Growing Places frames measure just four feet in width, twice the distance an average adult can reach.

CHAPTER 3

SOIL CARE

IN THIS CHAPTER

- Feeding the Soil
- Soil Testing

The most important part of a healthy garden is healthy soil. While soil science can be a very complex area of study, this chapter will aim only to review the basics of keeping your soil healthy. If you're interested in learning more, Growing Places recommends reading one of the resource books or links noted in this guide or on our website for more detailed information.

FEEDING THE SOIL

Healthy soil is an essential step in a cycle of nutrition. Healthy, nutrient-dense soil will produce healthy, nutrient-dense food, which in turn keeps us healthy and nourished. Feed your soil and it will feed you!

Each season, many of the vegetables we love the most, like tomatoes, will require large quantities of nutrients from the soil in order to grow. Plants like this are called heavy feeders. Others, like beans and peas, actually help to replenish nutrients in the soil. These plants that give back to the soil are known as builders. A careful crop rotation alternating feeders and builders will help maintain the nutrient levels in your soil.

The soil you receive from Growing Places is an ideal mix for growing vegetables and will not need any amending, or improving, for several years. However, even with careful crop rotation, steadily worked soil can get depleted over time. To keep your soil's nutrient levels high, we recommend regularly adding organic matter.

Organic matter is critical to healthy soil. Every time we harvest, nutrients are removed from the soil. The addition of organic matter to the soil returns the nutrients. Compost is a great way to incorporate organic matter into the soil. It can either be purchased or you can create your own compost using kitchen scraps and yard debris. If you are interested in starting your own compost pile, please ask a Growing Places staff person for more information or refer to one of our resources listed on our website. First- and second-year Growing Places gardeners will receive one 40-pound bag of compost per bed to be turned into the soil in the fall. We recommend adding compost in this fashion at the end of every growing season. Not only is this method a good way to feed your garden, but making your own compost also reduces the amount of garbage you pay to dispose of.

In addition to compost, you may choose to apply an organic fertilizer to your soil. (Note: Growing Places soil contains fertilizer—chicken manure—already.) Fertilizer is sold in both liquid and granular forms.

Liquid fertilizer is generally sprayed on the soil or on the plant itself and is applied either directly from the bottle or, after being diluted with water, with a spray bottle.

Granular fertilizer is added to the soil in advance of planting or to the top of the soil around the base of the plant. After applying granular fertilizer to the soil around a plant, gently scratch the fertilizer into the top inch of soil to help distribute it evenly.

With both types of fertilizer, organic is recommended. Be sure to read and follow the instructions on the packaging before applying it to your soil. Over-fertilizing can harm or even kill your plants.

SOIL TESTING

You may be wondering how you can tell if your plants have used up all the nutrients in your soil. How do you find out if it's time to add more? Symptoms in your plants, such as leaves turning purple or plants producing healthy greens, but no vegetables, might tip you off, but there is one fool-proof way to know what your soil has and what it needs: soil testing.

If you begin to notice unexplained symptoms in your plants, we recommend conducting a soil test in the fall. Testing in the fall allows you to add the amendments recommended in the test results before winter, giving the new material time to work its way into the soil before spring planting.

UMASS Extension Service offers inexpensive soil testing through their Soil and Plant Tissues Testing Lab. Soil samples and soil test ordering forms can be mailed to:

*Soil and Plant Tissue Testing Lab
West Experiment Station
682 North Pleasant Street
University of Massachusetts
Amherst, MA 01003*

UMASS Soil and Plant Tissue Testing Lab can also be reached by phone at 413.545.2311 or email at soiltest@umass.edu if you have questions.

Instructions for taking a soil sample are provided on their website: soiltest.umass.edu. A few weeks after mailing your soil sample to the lab, you will receive your soil test results, indicating what nutrients are present in your soil and which are low. UMASS' soil lab kindly makes recommendations on what to add and how to add it.

OUR SOIL RECIPE (PER 4-FOOT X 8-FOOT RAISED BED)

1 yard of soil + 1/3 of a 2-cubic-foot bag of vermiculite + 96 ounces of Chickity Doo Doo chicken manure

See **Appendix B: Resources** for Growing Places recommended suppliers.

SAFETY FIRST

All fertilizers, including organic ones, are chemical in nature and can be harmful to children or pets if ingested. Store safely out of reach.

CHAPTER 4

WATERING, MULCHING & WEEDING

IN THIS CHAPTER

- The Three Stages of Watering
- How to Water
- A Note about Mulch
- Weeding Your Square Foot Garden

With healthy soil in place and your garden planted, the work of tending—watering, mulching and weeding—will consume much of your time in the summer. In this chapter we’ll address the common question, “How often should I water and how much?” as well as offer some tips to conserve water and minimize your water bill. In addition, we’ll review the benefits of mulching and the importance of regular weeding.

THE THREE STAGES OF WATERING

Plants have different moisture needs during their three stages of growth: seed, seedling and mature plant.

SEEDS

After you have sown seeds, your goal is to keep the area where the seeds were planted moist, but not soggy. Use the mist setting of a spray head on your hose or scoop a cup of sun-warmed water from a nearby bucket and gently water the soil until it is moist, but no puddles are forming. Small seeds can wash away if the stream of water is too strong, so water carefully, but thoroughly. You want at least the top 1 inch of soil to be damp. You can check the moisture depth by inserting your finger into the soil up to the first knuckle. Depending on the weather, you may need to water this way every day or so until the seeds sprout.

SEEDLINGS

Once your seedlings have emerged and established themselves, they can tolerate a bit of dryness in the top 1 inch of soil. Use your watering can, a gentle spray from your hose, or a scoop from a bucket of water to water your plants when the top 1 inch of soil is slightly dry. Water deeply so all the soil is moist again. You might need to do this every other day.

MATURE PLANTS

Once your plants mature, the three steps to determine when and how much to water them are:

1. **Check the weather forecast:** It's important to check the weather before watering. Your plants may need water, but if a drenching rain is expected that afternoon, you will not want to water that morning since over-watering can be just as unhealthy for plants as under-watering.
2. **Check your soil:** If you have checked the weather and no rain is forecast, stick your finger in your garden soil up to the second knuckle. Is the soil dry at the tip of your finger? If so, it's a good idea to water. Most mature plants require about 1 inch of water per week. You can place an empty tuna can in your garden as a rain gauge. If the can hasn't been filled by rain during that week, give your garden a good watering.
3. **Pay attention to what the plants are telling you.** If the leaves are drooping or looking wilted, it's likely they're parched and need a good drink. If they begin to yellow, they may be being over-watered. If they wilt at mid-day, but perk up at night and early morning, they're doing fine.

METHOD	THE GOOD NEWS	THE BAD NEWS
WATERING BY HAND	<ul style="list-style-type: none"> • Watering by hand allows you to direct the water stream straight at the base of your plants. This will keep the leaves dry and prevent fungus or blight problems. • You also have control over how fast the water flows, so you can gently water seeds or delicate seedlings without fear of washing them away. 	<ul style="list-style-type: none"> • Watering by hand is definitely the most time-consuming way to water and, because of that, requires a little more planning on your part. • Using a watering can is also probably the most physically demanding option, especially if your water source is not right next to your garden.
WATERING WITH A HOSE	<ul style="list-style-type: none"> • Watering with a hose is much quicker than watering by hand. • You can still direct the water stream at the base of the plants. • With a spray nozzle, you have some control over the water stream. 	<ul style="list-style-type: none"> • With or without a spray nozzle, the water stream is usually too strong to water delicate seeds. • Water from a hose can disrupt the surface of the soil and splash dirt on your plants, which can spread soil-borne diseases and disturb sensitive root crops. • Dragging a hose to and around your garden can be physically challenging.
USING SOAKER HOSES	<ul style="list-style-type: none"> • Once set up (We recommend you lay the hose in the center of the bed, turn it on low for 20 minutes every other day.), soaker hoses are the most convenient way to water. You can either turn them on and turn them off or purchase a timer to do even that task for you. • Soaker hoses lose the least amount of water to evaporation because they sit right on top of the soil. This makes them the most cost-efficient way to water. 	<ul style="list-style-type: none"> • The hoses and timer can be an expensive investment at the start. • The hoses and timer need to be laid out and set up, although this is generally a one-time task. • Soaker hoses are prone to leaks and need to be checked regularly to be sure water is reaching all the way to the end of the hose.

HOW TO WATER

There are a few different ways to water your garden, and each has advantages and disadvantages.

Whichever method you choose, you'll want to conserve water by making sure it doesn't evaporate in the hot summer sun. The best way to achieve this is to water during the coolest hours of the day, preferably in the early morning. If you water before the sun rises above the tree line, it will allow your plants time to soak up the water, but will also give any water on the leaves an opportunity to dry up during the heat of the day. This helps prevent the spread of fungus and blight. If you water in the evening, wait until the sun has again dropped below the tree line, but make sure there are a couple hours of warmth left so that water does not sit on the leaves overnight.

The soil you've received from Growing Places can hold a lot of water, however, once it dries out, it can take a while to absorb water again. Be patient and water slowly so that water doesn't run off the edges of your bed away from your plants.

A NOTE ABOUT MULCHING

Mulching is not a necessity for your garden, but it does provide substantial benefits—water conservation, weed control, and disease control. Mulching also helps keep the soil cool in summer and warmer when the early fall nights start to cool.

A variety of materials can be used as effective mulches, but one of the most convenient is often grass clippings. When applying grass clippings, be sure only to use grass that has not been treated with chemicals. Spread them thinly, one to two inches, and leave the area immediately surrounding the base of the plant bare.

Black-and-white newspaper is another great option. (Avoid incorporating any color or glossy pages as the inks used to produce these are not safe to incorporate into your soil.) Layer 6-8 sheets, overlapping layers, and anchor the paper with a thin layer of soil or with rocks.

Straw, seed-free hay like salt marsh hay, or shredded leaves also make good mulch and will aid in producing a more nutrient-rich soil.

WEEDING YOUR SQUARE FOOT GARDEN

One of the advantages to using the square foot gardening method is that the close spacing of the plants crowds out and overshadows some weed growth, making the job of regular weeding much more manageable. Weeds rob your vegetables, herbs and flowers of nutrients in the soil and water. Keeping them out of the garden will give your plants the best chance possible at thriving.

When weeding around delicate root crops like carrots or beets, be careful not to affect the soil surrounding them as they don't like to be disturbed. If you cannot pull a weed up without disturbing the soil, use a pair of scissors and snip the weed at its base.

Little fingers are great at pulling up teeny weeds, so try getting the children involved, too!

WISE WORDS

“A weed is a plant that has mastered every survival skill except for learning how to grow in rows.”

Doug Larson

(Or in squares!)

PART 2

PLANT & PEST GUIDE

Now that you know the gardening basics, you're going to need some details. When is an eggplant ripe enough to pick? What's that little grey beetle on the squash plant? What on earth can I do with all this zucchini? If you have questions about specific crops or pests, this section is the place to look for answers.



CHAPTER 5

VEGETABLES

IN THIS CHAPTER

Each vegetable you grow will have unique needs and uses. This chapter is dedicated to providing all the detailed information of how to grow, tend, harvest and prepare your vegetables.

BEANS, BUSH & POLE

SQUARE FOOT PLANTING:

Bush beans: 9 plants per square foot

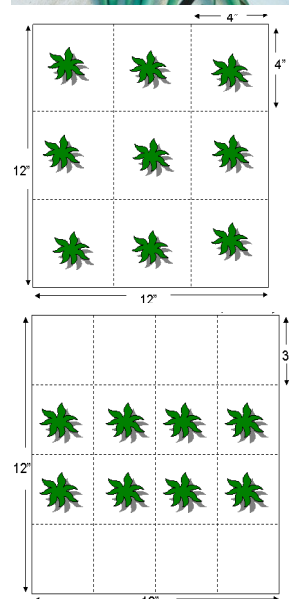
Pole beans: 8 plants per square foot

SEED DEPTH: 1 inch

GERMINATION: 7-10 days

GROWTH

- Bush bean varieties mature earlier than other varieties of beans, so consider sowing these in late May along with other varieties such as pole beans. If the weather is still wet and cold, wait until early June.
- For a season-long supply, practice succession planting by planting your bush beans every 3 weeks, about 2-4 times during the season.
- Pole beans are natural climbers and, unlike bush beans, will last throughout the season.
- Pole beans require a trellis or something to climb up. Sow the seeds in the squares along the bottom of your trellis. As the pole beans grow, help the plants' tendrils wrap up and around the trellis – the taller the trellis, the better!
- When watering beans, be careful not to wet the foliage; disease and fungus will thrive on wet leaves.



HARVESTING

- Choose bright colored pods (green, yellow, red, or purple based on the variety) that are flexible, but feel crisp.
- Be very careful to snap off only the bean, not breaking the stems, or yanking up the whole plant. The plant will continue to produce flowers and fruit if the beans are picked continually.

STORAGE

- Beans are best eaten within 1 week of harvest.
- Store unwashed in a perforated plastic bag in the refrigerator.
- All pod beans can be pickled or canned (i.e. dilly beans). Be sure to follow proper pickling procedures.
- Beans can be blanched, and then frozen for storage. To blanch your green beans, toss them into boiling water for 30 seconds, then remove and plunge into cold water. Blot the beans dry, and place them in a sealable plastic bag. Remove all the air from the bag, seal and put in the freezer.

USE

- Wash beans just before preparation.
- Break off the top of the bean at the stem end; there is no need to remove the fine point at the tip.
- Beans retain the most of their nutrients and color when cooked briefly and are delicious eaten raw, blanched, steamed, or stir-fried.

HOW MUCH DO I HAVE?

1 pound of beans = 3 cups of raw, cut beans = 2 ½ cups of cooked beans

BEETS

SQUARE FOOT PLANTING: 16 beets per square foot

SEED DEPTH: ½ to 1 inch

GERMINATION: 7-10 days

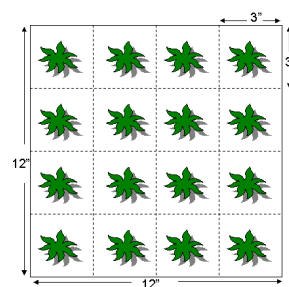
GROWTH

- Beets are best grown at temperatures ranging from 60-65 degrees F; this means that beets are an early season or late season crop. However, it is important to note that early plantings can fail if it is too cold and wet.



BEETS (CONTINUED)

- Sow new squares every 3 weeks from mid May through mid August for a continual supply of beets.
- Each beet seed will germinate into several seedlings. In order to encourage maximum growth, only one seedling should remain. Remove other seedlings by snipping them off with garden scissors to thin.
- Beets require moist soil so make sure to water daily when temperatures are high.
- If you find that your beets are not “bulbing out,” (when beets grow long in a carrot-like manner instead of growing into a rounded shape) there may be a lack of nutrients in your soil. Perform a soil test and add compost if necessary.

**HARVESTING**

- Use your fingers to gently feel around the sides of the beet to determine its size. Beets can be harvested when they reach about 1 ½-2-inches wide.
- Gently pull the beet straight up when you see the “shoulders” peeking above the ground. Remove the top by twisting or cutting off. Both the greens and the root can be eaten.

STORAGE

- Beet greens are best used fresh, but may be refrigerated unwashed in a plastic bag. They should be eaten within 3-4 days.
- For beet roots: cut off leaves and stems about 1 inch above the root. Store unwashed in the crisper drawer. Beets store well for about 2 weeks.

USE

- Young beet greens can be tossed raw into a mixed green salad. Additionally, older greens can be eaten steamed or sautéed. They can be used in any dish calling for a mild green or as a substitute for spinach.
- There is no need to peel the root, only scrub the beet clean of dirt. A beet with skin intact has more natural nutrients than a beet without its skin.
- Beets can be eaten in a variety of ways: grated raw, steamed, boiled, pickled, or baked. A baked beet will be a bit sweeter than a boiled, steamed, or raw one.

HOW MUCH DO I HAVE?

10 small beets = 4-5 medium = 1 pound of beets = 2 cups of sliced or diced cooked beets

BROCCOLI

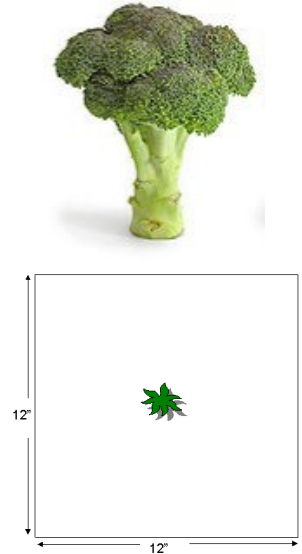
SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

GERMINATION: 4-7 days

GROWTH

- Plant seedlings every 3 weeks, from mid-April through late May, to spread out your harvest over the season.
- Broccoli plants enjoy moist soil. Refrain from getting the heads of broccoli wet when watering. This can attract unwelcome diseases and give the broccoli florets “sunburn.”
- Broccoli has a preference for acidic soils: to maximize broccoli growth, add minor amounts of fish emulsion, or manure-compost and water to the soil. NOTE: Add manure-compost or fish emulsion at your own discretion and at most once every two weeks.
- Broccoli prefers full sunlight, but is prone to bolting in high heat. Planting in partial shade can help prevent this.



HARVEST

- The broccoli variety supplied by Growing Places will produce many small broccoli florets, 2-3 inches in diameter. When they are dark green and the buds are tight, they are ready for harvest. If harvested regularly, the plant will continue to produce more florets throughout the season.
- Traditional broccoli varieties will produce a single larger head, 4-8 inches across.
- If the buds on the broccoli florets/head begin to swell, this is a sign that the broccoli is about to flower. Harvest immediately.
- To harvest, use a sharp knife and cut the broccoli head off about 2-3 inches below the head at a single thick stem.

STORAGE

- Store unwashed in a plastic bag in the crisper drawer of the refrigerator. Broccoli tastes best if used within the first few days of harvest; however, it can be stored up to a week.
- For long-term storage, broccoli freezes well. Blanch for 3-4 minutes, then rinse in icy cold water and pat dry. Place blanched broccoli in an airtight container such as a freezer bag and seal closed. Defrost broccoli when needed.

USE

- Soak head or florets upside down in cold, salted water to remove any hidden pests.

BROCCOLI (CONTINUED)

- Remove lowest part of the stem if woody or tough.
- Cut large heads into smaller florets before cooking.
- Broccoli can be eaten raw, steamed, blanched, roasted, or sautéed. Remember the stems are delicious too!

HOW MUCH DO I HAVE?

1 pound of broccoli = 2 cups of florets

1 bunch = 3 cups of chopped, cooked broccoli

BRUSSELS SPROUTS

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼-½ inch

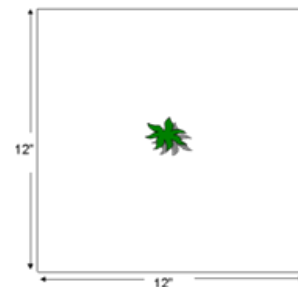
GERMINATION: 7-10 days

GROWTH

- Brussels sprouts are a hardy, slow-growing, long-season vegetable belonging to the cabbage family.
- Sprouts improve in taste by growing sweeter, and grow best in cool or even lightly frosty weather.
- The sprout itself is located between the base of the leaf and the stem above it.

HARVEST

- The sprouts (or buds) can be cut off the stem when they are firm and no more than 1-1 ½-inches in diameter. Harvest from the bottom up.
- Avoid consuming yellow sprouts with signs of wilt rot or insect damage. Remove sprouts from plant immediately and put any diseased plant material in the trash.
- The best tasting sprouts are usually produced in the fall; sunny days and light frosts will provide quality sprouts.



STORAGE

- The fresher the sprout, the better the flavor, so refrigerator storage should not exceed a day or two.
- Remove damaged outer leaves and store fresh, unwashed sprouts in plastic bags in the crisper.

USE

- The key to cooking Brussels sprouts is in not overcooking them.
- When cooking the sprouts whole, the leaves will cook faster than the core; cut an X in the bottom of the stem for even cooking.
- Sprouts are delicious steamed briefly and served warm or cut in half and roasted in the oven with olive oil, salt and pepper for 20 minutes.

HOW MUCH DO I HAVE?

One pound of sprouts = 4 cups of sprouts

CABBAGE

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

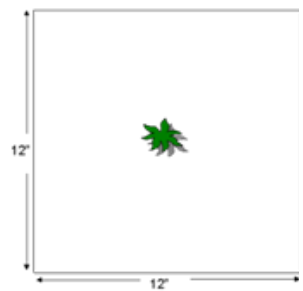
GERMINATION: 5 days

GROWTH

- Cabbage enjoys cooler temperatures and early varieties can be started in late April. For all other varieties, plant in mid-May to mid-June.
- Plant every 3 weeks for a continual harvest throughout the season.
- When watering cabbage, try not to wet the leaves. Excess moisture can encourage rotting and disease.

HARVEST

- Cabbage can be harvested any time after the heads form. Homegrown cabbage heads are often smaller in size than those found at supermarkets.
- Using a very sharp knife or pruning shears, cut as close to the lower surface of the head as possible leaving the loose outer leaves intact.
- Cutting a cross pattern into the stalk about ¼-inch deep might allow another set of heads to form if



CABBAGE (CONTINUED)

there is enough time in the growing season.

STORAGE

- Savoy and Chinese cabbage will keep for up to 2 weeks in the crisper drawer of the refrigerator, unwashed. Do not remove outer leaves before storing.
- Solid core cabbage can keep as mentioned above, for 3 weeks to 2 months. In a root cellar at high humidity and 32°F cabbage can last for 4-5 months.

USE

- Remove wilted outer leaves, quarter the head, remove core if necessary, and cut into preferred size slices.
- Cabbage may be eaten raw, thinly sliced in salads, slaws or sauerkraut.
- Cabbage may be cut into thicker slices for steaming, 5-6 minutes or left in whole wedges and steamed for 10 minutes.

HOW MUCH DO I HAVE?

1 medium head of cabbage = 1 ¼-1 ½ pounds

1 pound = 3 ½-4 ½ cups of shredded cabbage

CARROTS

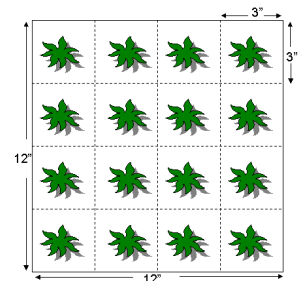
SQUARE FOOT PLANTING: 16 plants per square foot

SEED DEPTH: ¼-½ inch

GERMINATION: 6 days

GROWTH

- Carrots can be sown at 3-week intervals from late April to early August.
- Keep soil moist and weed-free after planting.
- Do not feed carrots manure; this causes the carrot to split into several roots (forking) and become covered with fine little hairs.



HARVEST

- Carrots can be pulled once the roots are ½-inch in diameter.
- Use a spading fork to loosen the soil and pull the carrots gently from the earth.
- Carrots taste the sweetest after the first frost, and are considered a hardy plant.
- Carrots can be “stored” in the ground throughout winter, as long as the ground is not too frozen to dig them up!

STORAGE

- Cut or twist off tops and place unwashed carrots in the crisper drawer for up to 2-4 weeks.
- Carrots can be left in a root cellar or a dark, dry storage bin for a few months.
- For long-term storage, carrots can also be frozen. Cut carrots into 2-inch rounds, blanch for 3 minutes, rinse in cold water and drain. Pat them dry and pack into an airtight container such as a freezer bag. Defrost when needed.

USE

- Scrub carrots with a vegetable brush, under running water, to remove dirt.
- Peeling carrots can remove important nutrients that lay just under the skins’ surface. Peel just to remove damaged areas.
- Raw carrots are sweet and delicious and can be juiced, grated or cut into sticks.
- Lightly cooked carrots are even sweeter than when they are raw.
- Try carrots boiled, blanched, broiled, roasted, stir-fried or puréed in soups.

HOW MUCH DO I HAVE?

5-7 medium sized carrots = 12-14 small carrots

1 pound of carrots = 2½ cups shredded or sliced = 2½ cups cooked

CAULIFLOWER

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼-½ inch

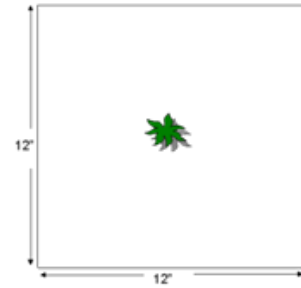
GERMINATION: 6 days



CAULIFLOWER (CONTINUED)

GROWTH

- Cauliflower prefers extended (at least 70 days) cool (60 degrees F) temperatures and is therefore difficult to grow as a spring crop here. As a beginner, or if you have limited space, save this crop for a fall harvest, seeded in mid-July.
- To improve results for a spring crop, start seeds indoors in late February and transplant outside in mid-April.
- To keep cauliflower white, tie large leaves around the heads using a rubber band to secure the leaves at the top when the heads are 1-3 inches wide.



HARVEST

- Heads are mature when compact and firm and the leaves have begun to open up to show the head.
- Harvest the head by cutting the main stem, leaving a few leaves to protect the head.
- Be gentle with the heads to avoid bruising and getting them dirty.

STORAGE

- Refrigerate cauliflower, unwashed, in a plastic bag, or tightly wrapped in plastic.
- Cauliflower will keep well for 1 week, and will still be useable for up to 2 weeks, but may take on a strong odor or flavor.
- For long-term storage, cauliflower can be frozen. Blanch for 2-4 minutes, rinse in cold water to stop the cooking process, drain, let dry, and pack into airtight containers such as freezer bags. Cauliflower will not be firm when thawed and is best used in soups and stews.
- Cauliflower can also be pickled; be sure to follow proper preservation instructions.

USE

- Soak head upside down, in cold, salted water to remove any hidden pests.
- Remove tough outer leaves and cut away the thick bottom end. Rinse the cauliflower head, trim off any blemishes, and core the head for even cooking.
- The head may be left intact or cut into florets. All parts of the stalk and florets are edible.
- Cauliflower can be eaten raw, steamed, stir-fried, or puréed in soups for a creamy base or thickener.
- Cooked cauliflower does not keep well in the refrigerator.

HOW MUCH DO I HAVE?

1 medium head of cauliflower = 1 ³/₄-2 ¹/₄ cups of cauliflower

CHARD

SQUARE FOOT PLANTING: 4 plants per square foot

SEED DEPTH: ½ inch

GERMINATION: 5-7 days

GROWTH

- Chard can be planted in early spring, and then successively every two months, for a steady three-season-long supply.
- Each seed germinates into several seedlings. Only one seedling should be allowed to develop, so keep the sturdiest and snip off the others.

HARVEST

- Snip **ONLY** the outermost leaves of the plant with scissors or a sharp knife. This not only allows inner leaves to reach full maturity, but also stimulates new growth.
- Do not cut off all the leaves of the plant as it will stop producing new ones.

STORAGE

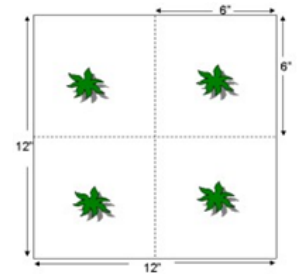
- Chard is very perishable and is best eaten within 2-4 days.
- Wrap unwashed chard in a damp cloth, or place in a plastic bag and refrigerate.
- Chard can also be stored with cut stems immersed in 1 inch of water. Change water daily until chard is used.
- Chard freezes very well. Blanch chopped leaves for 30 seconds. Rinse under cold water for 3 minutes to stop cooking. Drain, squeeze lightly, pack into ball shape and store in an air tight container.

USE

- Young leaves are very tender and can be used in salad; larger leaves are good for sautéing or in soups.
- Can be used in place of spinach in most recipes.

HOW MUCH DO I HAVE?

1 pound of chard = 5-6 cups of leaves, raw = 1 cup of leaves, cooked



COLLARDS

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼-½ inch

GERMINATION: 6 days

GROWTH

- Plant early varieties in April/May.
- Collards are also a good late crop. To harvest greens well into autumn, plant in early June and again in late June.

HARVEST

- Collards can be eaten when the leaves are large or small.
- Use a sharp knife and cut off the leaves starting at the bottom of the plant. The top will continue to grow and produce more leaves.
- Wait until the first frost to harvest your collards; they will taste sweeter after the first frost.

STORAGE

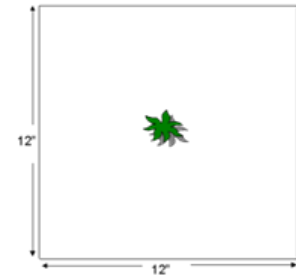
- Collards can be stored for up to 2 weeks in the crisper drawer of the refrigerator, unwashed, wrapped in a damp cloth.
- Collards can also be stored at room temperature with the cut stems in 1 inch of water. Change water daily until collards are used.

USE

- Collards are wonderful sautéed or cooked in soups.
- Can be treated in the same manner as cabbage.

HOW MUCH DO I HAVE?

1 pound of collards= 6 cups of raw leaves= 1¼ cups of cooked leaves



CORN, SWEET

SQUARE FOOT PLANTING: One 6-8-foot corn stalk per square foot
OR four 4-foot stalks per square foot

SEED DEPTH: 1 inch

GERMINATION: 4-12 days

GROWTH

- Corn relies upon wind for pollination and therefore needs to be planted in a block of at least 4 x 4 in order to produce ears.
- Corn takes a long time to reach maturity. When planning your garden, dedicate space just for corn and stagger planting times for a longer harvest period.
- Select a location where it won't shade other crops as it grows.
- As the corn stalks grow, hill dirt around the base of the stalks.

HARVEST

- Each plant will produce one to two ears of corn.
- Corn is ready to be picked as soon as the ears have completely filled out.
- Harvest with two hands; one to hold the stalk and the other to pull down and break off the ear to prevent breaking the stalk.
- Cut the stalk to soil level when all the ears have been harvested (Don't pull it out as you may disturb the roots of the surrounding stalks).

STORAGE

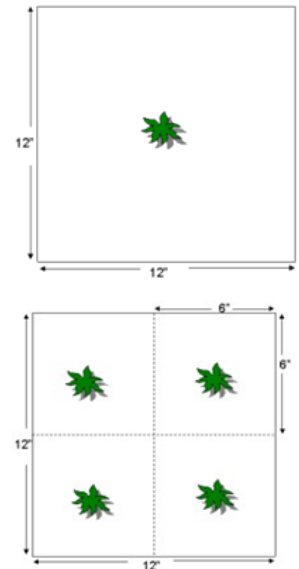
- Harvested corn loses its sweetness very quickly, so try to cook and eat it as soon as possible.
- If you harvest more than you can eat, cut the kernels off the cob and freeze them.

USE

- In addition to eating it on or off the cob with butter, you can use corn in relishes, salsas, salads, soups, stews, muffins and breads.

HOW MUCH DO I HAVE?

1 pound of corn (kernels) = 3 cups of corn



CUCUMBERS

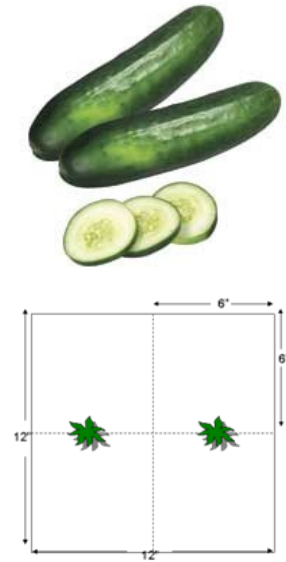
SQUARE FOOT PLANTING: 2 plants per square foot

SEED DEPTH: ½-1 inch

GERMINATION: 3-4 days

GROWTH

- Plant the cucumber seeds or seedlings in early June when the soil has warmed up. Be careful not to disturb the roots of these seedlings.
- Cucumbers, like beans, are natural climbers. They work well with a trellis or 4-5 foot high fence of chicken wire. If you are not growing them vertically, leave ample room for them to sprawl out on the ground.
- Cucumber plants and their fruit are naturally prickly. If you have sensitive skin, wear gardening gloves when harvesting or weeding around the plants.



HARVEST

- Look for firm cucumbers that are crisp. Smaller ones will be most flavorful.
- Remove by gently twisting off the vine any fruits that are ripe.
- Pick continually as this will cause the plant to produce more!
- Best when harvested early in the morning to avoid bitterness.

STORAGE

- Refrigerate immediately. Store loose or in a loose plastic bag in the crisper drawer. When stored properly, cucumbers will stay fresh up to 10 days after harvest.
- A cucumber refrigerated after being cut or peeled will deteriorate rapidly. Use leftovers as soon as possible.

USE

- Cucumbers are most often eaten raw. Try them diced or sliced in salads, on their own as a snack, or chopped into a cold yogurt and mint soup.
- Cucumbers make delicious pickles. Be sure to follow proper preservation instructions.
- Additionally, cucumbers can be cut into thin slices (julienned) and stir-fried or sautéed.

HOW MUCH DO I HAVE?

2 medium cucumbers = 1 pound of cucumbers = 2 ½-3 cups of sliced or chopped cucumbers

EGGPLANT

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: not applicable, transplants recommended

GERMINATION: not applicable

GROWTH

- Eggplant must be transplanted in order to develop mature fruit in New England. Plant transplants when the weather has warmed up in early June since they need plenty of sun and heat.

HARVEST

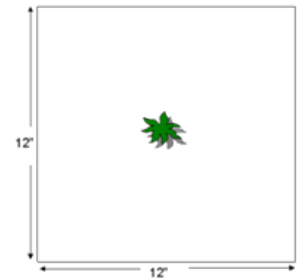
- Harvest eggplants when they are 6-8-inch long, glossy, and springy to the touch. If they are very large, have become dull or brownish, or feel soft to the touch, they are probably over-ripe and seedy.
- To harvest your eggplant, use a knife or scissors to cut the stem, do not twist or pull or break the stem as you may damage the plant.
- Eggplants have a naturally occurring green collar called the calyx. Leave this green part attached to the fruit until you are ready to use your eggplant.
- Continue to harvest ripe eggplants as this encourages the plant to produce more fruit.

STORAGE

- Optimal storage for eggplant is 50 degrees F and humid, but in general, eggplant do not store well. If the weather is hot, refrigerate unwashed in the crisper drawer for up to 1 week.
- For long-term freezer storage, cut eggplant in cubes, steam for 3-4 minutes, allow to cool completely and store in airtight containers in the freezer.
- Dishes such as baba ghanouj and ratatouille also freeze well in airtight containers.

USE

- Like other plants in the nightshade family, eggplant contains some quantity of solanine, a substance which can be toxic to humans when ingested in large quantities. The amount of solanine present decreases as the fruit matures. To avoid any risk of stomach upset, always cook eggplant fully to leech any remaining solanine out of the fruit.
- Eggplant can be peeled, but peeling is not essential and generally depends on personal preference and the intended dish.
- To reduce bitterness and excess moisture in the fruit, lightly salt slices or cubes of eggplant and allow them to sit in a strainer for 10-15 minutes. Gently squeeze out any excess liquid.



EGGPLANT (CONTINUED)

- Eggplant is extremely versatile! It can be baked, grilled, stuffed, fried, steamed, sautéed, or puréed.

HOW MUCH DO I HAVE?

1 medium eggplant = 1 pound of eggplant = 4 cups, diced = 1¾ cups of cubed, cooked.

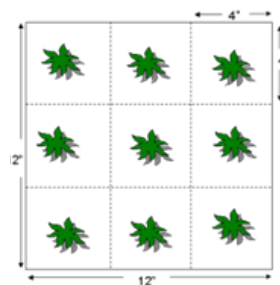
GARLIC

SQUARE FOOT PLANTING: 9 cloves per square foot

SEED DEPTH: 3 inches, pointed end up

GROWTH

- In fall, plant garlic once the nights are chilly and the days are cool, so watch the weather forecast rather than your calendar. Plant your garlic by the middle of November, before the ground freezes.
- Separate the cloves of garlic from the stem. Do not peel.
- Pick out the large healthy cloves; set aside any that are very small, and discard any that are soft or have dark patches.
- Poke a hole in the ground that is 3 inches deep and put a single clove in the hole, with the pointy end up. The tip of the point should be about 1-2 inches below the soil. Cover with soil.
- Mark the area with a label so you remember where you planted them!
- If the soil is dry, water deeply to help garlic establish before the ground freezes.
- Mulch with 3-4 inches of shredded leaves or straw.
- If your garlic begins to sprout in the winter, don't panic. Garlic is hardy and will survive the toughest winters. Just make sure to mulch over the winter AND to thin back the mulch in the spring so the plants get plenty of sunshine!
- In spring, water the soil when dry while bulbs are growing. Stop watering in early July when garlic is nearing harvest time.

**HARVEST**

- The bulbs will produce long green stems, with a pale swollen tip called scapes. These can be cut off

with scissors and can be chopped and used like scallions in salads and stir fries. (Some argue that the scapes should be cut off to encourage bulb growth).

- In late summer, mid July, when the leaves begin to yellow at the base, harvest garlic by gently digging up the bulbs.
- Fresh garlic tastes great but also remember to put some aside for next year's crop!
- If you have small cloves left over from planting you can still use them for cooking this year, or plant them for an early spring crop. Use the same method as above, but plant them only 1-2 inches apart in a separate area. These bulbs will be very small and are only to be used for cooking.

STORAGE

- Store garlic in a dry, low moisture area. Hang in bunches or in mesh bags. Warm, humid temperatures will encourage garlic to sprout.
- Do not refrigerate unless storing peeled cloves for a short time. Keep in an airtight container to avoid garlic odor from spreading to other foods.
- For long-term storage, garlic can be minced, placed in airtight containers and frozen. It can also be pickled. Be sure to follow proper preservation instructions.

USE

- Garlic scapes can be chopped or diced raw into green salads or pasta salads, sautéed in place of bulb garlic, eaten raw, or used anywhere garlic flavor is desired. They are milder in flavor than bulb garlic and can also be substituted for scallions.
- To peel garlic cloves, loosen the skin by placing the clove on its side on a hard surface. Press the clove with the side of the knife applying pressure with your fist. Press, mince, slice or use cloves whole. If sautéing garlic, cook only until nearly see-through. Browned garlic will release a bitter flavor
- To enjoy the stronger flavors of garlic, use it raw or with minimal cooking.

HOW MUCH DO I HAVE?

1 medium clove = 1 teaspoon, minced

KALE

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ½ inch



KALE (CONTINUED)

GERMINATION: 5-7 days

GROWTH

- Enjoy fresh kale from early summer through fall by planting seeds in succession from late April through May. You can also harvest it right thru the winter if plantings are protected with a light covering.

HARVEST

- On smaller plants, harvest only the outer leaves. This not only ensures the growth of smaller, inner leaves, but also of a harvest that will last throughout the season.
- For more mature plants, pick the leaves at the bottom of the stalk, as the stalk will continue to produce greens.
- Select leaves that are crisp, broad, and dark colored and cut with a knife or scissors.

STORAGE

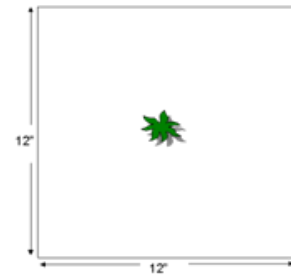
- Store unwashed leaves, wrapped in a damp towel, or in a plastic bag in the crisper drawer of the refrigerator. Kale can be stored in the refrigerator up to one week.
- If you have ample counter space, place the bunch of kale in a jar with the first 1 inch of the stem immersed in water. Change water daily until kale is used.
- For long-term storage, kale can be frozen. Wash, de-stem, and blanch leaves for 2 minutes. Rinse in cold water, drain, and pack into airtight containers such as freezer bags.

USE

- Wash kale leaves well, preferably by immersing in a water bath, to remove any dirt that gets trapped on the undersides and in all the crevices.
- Remove stems from mature kale leaves by folding the leaf in half lengthwise and stripping or slicing away thick stems. Save these stems and midribs, cut them into bite-sized pieces and cook them for longer than the leaves.
- Baby or very tender young leaves may be cooked stem and all.
- Kale may be steamed, sautéed, chopped finely for a winter salad, massaged in lemon juice and olive oil for 3 minutes and eaten raw, or chopped coarsely and added to soups at the end of their cooking time.

HOW MUCH DO I HAVE?

1 pound of kale = 6 cups of raw leaves = 1¼ cups of cooked leaves



LETTUCE

SQUARE FOOT PLANTING: 4 plants per square foot

SEED DEPTH: $\frac{1}{4}$ - $\frac{1}{2}$ inch

GERMINATION: 7-14 days

GROWTH

- Lettuce seeds can be sown at 10-day intervals starting in mid-April.
- During hot weather, lettuce tends to “bolt” or send up its seed stalks before the plant is fully mature, rendering the leaves bitter. Slow bolt varieties are preferable because they will not become bitter as quickly.
- Lettuce does not grow well in the hottest part of the summer. Provide shade if possible.

HARVEST

- Harvest leaves when they are young and tender. Pick early in the day to avoid bitterness.
- If you have a handful of lettuce plants, harvest the outside leaves from several plants by using a sharp knife to carefully cut each leaf off at the base.
- If you want to remove an entire head of lettuce, use a sharp knife and cut the head off just above ground level. Add the remaining stalk and root system to the compost pile to clear the square for future plantings.

STORAGE

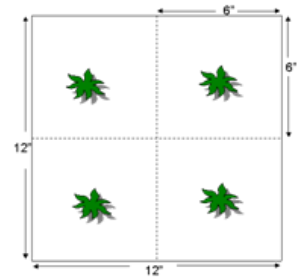
- Salad greens are best used within a few days. Wrap unwashed greens in a damp towel or place in a plastic bag with a damp towel in the crisper drawer. Lettuce will keep up to 10 days.
- If lettuce greens are wilted, let soak in a bowl of ice water for 15 minutes. Pat dry and store in a plastic bag in the crisper.

USE

- Young tender leaves make delicious salads, or lettuce wraps.
- Raw greens may be served under cooked vegetables or meats, the juices wilting them slightly.
- If you have whole lettuce hearts, you can grill them in foil for 5 minutes.

HOW MUCH DO I HAVE?

1 pound of lettuce = 4-6 cups of lettuce leaves



MELONS

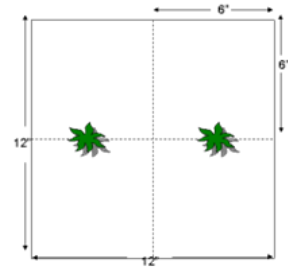
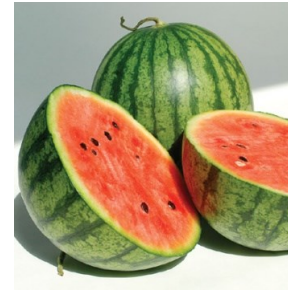
SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ½ inch

GERMINATION: 3-5 days

GROWTH

- Melons enjoy direct sun and warm temperatures. Sow seeds, pointy tip down, in June or plant transplants only after the soil has warmed up, which can be from late May to early June.
- When transplanting, be very careful not to disturb the roots; much like cucumbers, melons are prone to transplant shock.
- Melon vines take up a significant amount of space. When planning your garden, choose a location that will provide ample room for them to stretch out. Side and corner squares work well.



HARVEST

- Handle melons carefully at all stages of ripeness.
- The best test for ripeness is to examine the stem for cracks. If the stem separates when pushed gently with the thumb, then the fruit is ripe.

STORAGE

- Most uncut melons can be kept at room temperature. Musk melon will keep up to 2 weeks, honeydew melon 3-4 weeks, and watermelon up to 10 days.
- Cut melon will keep anywhere between 3-5 days.
- Store cut melon in plastic bags or containers in your refrigerator.

USE

- Melon is delicious freshly sliced or cut up in a mixed fruit salad.
- Try watermelon added to a green salad.
- All melons are great additives to smoothies.
- Cantaloupe and thinly sliced meats, such as prosciutto or ham, complement each other very well.

HOW MUCH DO I HAVE?

1 medium sized melon = 2-2½ pounds = 3 cups of melon

OKRA

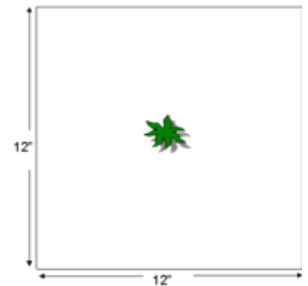
SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: $\frac{3}{4}$ inch

GERMINATION: 7-14 days

GROWTH

- Okra likes full sun and the seeds do not germinate or grow well in cool soil. Start seeds indoors 3-4 weeks before the last frost date. To direct sow seeds, wait until the soil has warmed in the spring, typically 1-2 weeks after the last frost.
- When planting okra seeds, be sure to soak the seeds overnight first.

**HARVEST**

- Harvest mature okra pods 3-4 days after the flower opens.
- Regular harvesting will ensure that the okra plant continues to produce fruit. Harvest at least every other day during the growing season.
- Harvest pods when they are 2-4 inches or they will become tough and fibrous. Cut pods from plants with pruners or a sharp knife to avoid pulling and possibly damaging the plant.
- Okra plants are prickly; wear gloves if you have sensitive skin.

STORAGE

- Raw okra can be stored in the refrigerator for 2-3 days. Store raw okra loosely in a plastic bag. Cooked okra can be stored in the refrigerator for 3-4 days.
- For long-term storage, blanch and freeze in air tight containers.

USE

- Okra can be served raw, marinated in salads or cooked on its own.
- Okra pairs well with most grains, as well as onions, tomatoes, corn, peppers and eggplant.

HOW MUCH DO I HAVE?

1 pound of okra = 3-4 cups of cut up okra

ONIONS

SQUARE FOOT PLANTING: 16 onions per square foot

SEED DEPTH: ¼-½ inch

START DEPTH: ½ inch

SET DEPTH: 1 inch

GERMINATION: 6 days

GROWTH

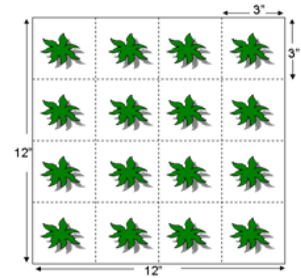
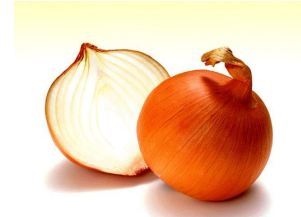
- Onions are biennial plants, meaning their natural rhythm is to grow from seed into a plant, and into a dormant bulb in their first year. In the second growing season, they will produce flower stalks which, if fertilized, will produce seeds and start the cycle over again. Onions can be grown in your garden from seed, from young first-year plants, which are referred to as starts, or as sets, immature bulbs, at the beginning of their second year of growth.
- Onion sets are recommended because they have a higher chance of surviving and will yield a larger bulb than seeds or transplants.
- Plant seeds and sets from late April to early May. If you begin with a pot full of starts, separate them into individual plants.
- Regular weeding and watering is crucial to a good harvest. Dry soil encourages onion bulbs to split.

HARVEST

- During the season, onions may be harvested as needed.
- Allow onions to grow until their tops fall over naturally. After the tops have died, keep the bulbs in the ground for a week or two. When the leaves are shriveled and brown they are ready to be dug up and stored.
- When bulbs are dug, spread outdoors in a sunny, airy location for three to seven days to dry. Then move indoors to a warm, dry and shady area and allow them to finish drying for another 3-4 more weeks.

STORAGE

- Do not refrigerate onions. Store in a cool, dry place, (ideally 40-50 degrees F) and they will keep for months. Warmth or moisture will cause sprouting.
- Store cut onion in the refrigerator in an airtight container to avoid transference to other foods. Use as soon as possible.



USE

- Onion is very versatile! Enjoy onions raw, steamed, boiled, sautéed, stir-fried, braised, baked, grilled, roasted and pickled!
- The longer an onion is cooked, the milder it becomes. For strongest flavors and medicinal benefits, use onion raw or lightly cooked.
- If onions have begun to sprout, they can still be used. Simply remove the center of the onion which contains the new growth, as it may cause indigestion.

HOW MUCH DO I HAVE?

- 1 small onion = 1/3-1/2 cup chopped
- 1 medium = 1/2-3/4 cup chopped

PEAS

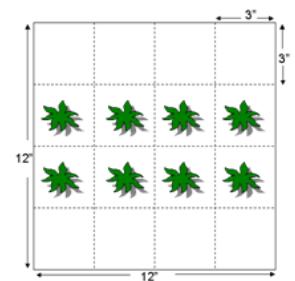
SQUARE FOOT PLANTING: 8 plants per square foot

SEED DEPTH: 1 inch

GERMINATION: 14 days

GROWTH

- Climbing varieties of peas save space and do not require successive plants.
- Typically, peas require the removal of their pod, a process called shucking or shelling, but snap peas are popular for their sweetness and convenient, edible pod.
- Plant peas 4-6 weeks before the last frost, which in New England is typically mid-April to mid-May. To encourage germination, soak your pea seeds 24 hours before planting them.



HARVEST

- If you have planted shelling peas they will be ready to pick when the pea pods are swollen.
- Sugar snap peas are at their best when the pods first start to fatten, but before they become too large. Snow peas are harvested before the peas have grown and the pods are nearly flat.
- Use both hands to harvest edible pods. Hold plant stem with one hand and use the other hand to

PEAS (CONTINUED)

pull off pod. Be gentle, and avoid damaging the plant stem so that it can continue to produce.

STORAGE

- Harvest peas regularly; this encourages the plant to develop more pods.
- Peas are at their absolute best immediately after harvest, as the sugars in the pea rapidly convert to starch which ultimately reduces flavor and sweetness.
- Pea pods can be stored in a plastic bag in the refrigerator for about 1 week, but storing peas does sacrifice some of their sweet flavor and crisp texture.
- Peas freeze well, but will lose their crunchy texture. Blanch all types of peas for 2 minutes (shell peas must be shelled first), rinse under cold water, drain well, and pack into airtight containers such as freezer bags.

USE

- Shelled peas can be used raw in stews, soups, mixed vegetable sautés, and stir fries, or can be blanched or steamed.
- Some snap peas need stringing. Snap off stem tip toward the flat side of pod and pull downward. Young, fresh, snap peas are delicious raw, or pods may be cooked very briefly (2 min.) and added to salads, deep fried in tempura batter, steamed, or sautéed.
- Snow peas are a classic stir fry vegetable and are best added in during the last minutes of cooking.

HOW MUCH DO I HAVE?

1 pound = 1 cup shelled

PEPPERS

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: not applicable, transplant only

GERMINATION: not applicable

GROWTH

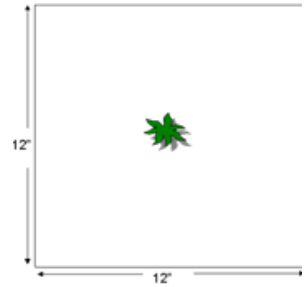
- In New England, peppers must be planted as transplants. Early-maturing varieties will do best.



- If you find your pepper plant is falling over due to heavy fruit, gently stake your plant upright.

STORAGE

- Refrigerate whole, unwashed, peppers for 1-2 weeks in the crisper drawer. Ripe red, yellow, orange, and purple peppers will not keep as long as the green ones.
- Peppers freeze well. Wash and dry peppers. Cut into bite size pieces and place in an airtight container, such as a freezer bag. Peppers will soften when thawed, so take out only the amount you need and replace the rest in the freezer.
- Peppers also dry well. There are many methods; it is best to consult a home preservation book to see which is most suitable for you.



USE

- To get the most nutritional value from peppers, eat them raw in salads, sliced up as a snack, or stuffed.
- Peppers can be cooked, stir fried, roasted, tossed in soups and so much more!
- Always use care when handling hot peppers. For greatest safety wear rubber gloves during handling. Refrain from touching eyes, nose, mouth or skin when handling hot peppers! Wash hands extremely well after handling and be sure to clean your prep area thoroughly.
- The seeds and membrane are the hottest parts of hot peppers and can be removed to mellow some of the pepper's heat. Include seeds if you prefer a spicier dish.

HOW MUCH DO I HAVE?

1 small bell or sweet pepper = $\frac{1}{4}$ cup of chopped pepper

1 medium bell or sweet pepper = $\frac{1}{2}$ cup of chopped pepper

1 large bell or sweet pepper = 1 cup of chopped pepper

3-5 medium bell or sweet peppers = 1 pound of peppers = 3-4 cups of chopped peppers

POTATOES

SQUARE FOOT PLANTING: 4 plants per square foot

SEED DEPTH: 1 inch

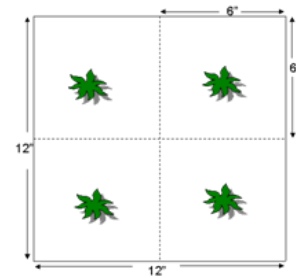


POTATOES (CONTINUED)

GERMINATION: 7-10 days

GROWTH

- Use seed potatoes: pieces of potato with two or more “eyes.” Do not use potatoes from the grocery store as they have likely been treated with an anti-sprouting chemical.
- Sprout your seed potatoes a week before planting by placing them in a location where they will receive light, but not direct sun.
- A day or two before planting cut your sprouted seed potatoes into 1-inch to 1½-inch pieces with at least one sprout per section.
- Remove about 5 inches of soil from the square(s) to be planted and place four seed pieces spaced evenly apart in each square with sprouts up. Just barely cover them with soil.
- When leafy shoots appear, mound soil around the plant stem, leaving only the leaves exposed: this is called “mounding” or “hilling.” Potatoes will eventually form inside the mound of soil. Continue to mound the soil every time the plant has grown about 6 inches until it begins to flower.
- Be sure that any developing potatoes are well covered to prevent them from turning green. Green potatoes should never be eaten as they contain toxic solanine, which can lead to an upset stomach if ingested in small quantities or more serious symptoms if consumed in larger doses.



HARVEST

- Small potatoes can be harvested as needed in early summer after the plants finish flowering.
- Later potatoes can be left in the soil until 2-3 weeks after the foliage has died back in the fall.
- For early potatoes, gently loosen the soil around the largest tubers and remove, leaving the smaller ones to continue growing. It's best to do it with your hands.
- For later potatoes, gently dig outside the plant and remove potatoes as you find them.

STORAGE

- If the weather is dry, leave the potatoes on top of the soil for 2-3 days to dry. This will toughen the skin for storage. Do not rub the dirt from the potato.
- Store potatoes in a cool (40 degrees F), dark location for 3-6 months.
- Do not store potatoes near apples, which give off a chemical that can damage the potatoes.
- Potatoes do not freeze, dry or can well.

USE

- Potatoes can be boiled, shredded or sliced and fried as French fries or hash browns, mashed, baked,

or roasted.

How Much Do I Have?

4 pounds of potatoes = 8 cups of cubed potatoes

3 medium sized potatoes = 3 cups of grated potatoes

RADISHES

SQUARE FOOT PLANTING: 16 plants per square foot

SEED DEPTH: ½ inch

GERMINATION: 4-12 days

GROWTH

- Radishes grow very quickly and can be sown every 3 weeks from late April to early August.
- Plant radishes around squashes to help fend off unwanted insects.

HARVEST

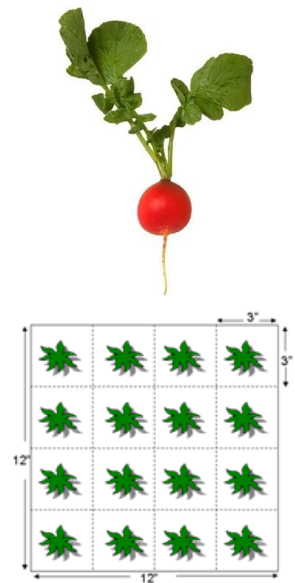
- Pull radishes when they are young, to avoid their getting overly hot and spongy.
- Fall/Winter radishes mature more slowly and can be harvested at a larger size.

STORAGE

- Remove tops and store in a perforated plastic bag or damp towel in the refrigerator; use greens as soon as possible.
- Radish roots can be stored for up to 2 weeks in a plastic bag in your refrigerator's crisper drawer.

USE

- Once you are ready to use them, radishes may need a good scrubbing to remove garden soil, but do not need to be peeled. Trim off any damaged areas.
- Radishes can be eaten raw, sliced or grated in salads, on sandwiches, as a snack, or as a garnish.
- Radishes can also be cooked, steamed, added to hearty soups and stews, or sliced into a stir-fry.
- Daikons are good for cooking and can be substituted in any recipe calling for turnips. Always peel daikons. Young daikons can be eaten raw, but larger ones should be cooked.



RADISHES (CONTINUED)

- Radish greens will cook quickly: toss radish greens into mixed-vegetable soups or stir-fries. If greens are young and tender, toss into a green salad.

HOW MUCH DO I HAVE?

12 whole radishes = 1 cup of sliced radishes

SPINACH

SQUARE FOOT PLANTING: 9 plants per square foot

SEED DEPTH: ½ inch

GERMINATION: 7-14 days

GROWTH

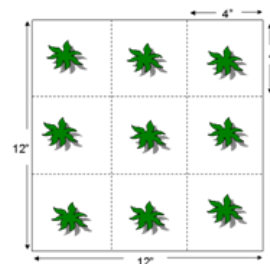
- Plant your spinach every 1-2 weeks from late March to the end of May, and plant again after the extreme heat of August.
- When exposed to high temperatures, spinach will bolt (produce flowers and seeds). Bolted spinach leaves quickly turn bitter and inedible; dispose of bolted plants promptly.

HARVEST

- Select spinach that is deep green with crisp stems. Plants are mature enough for harvest when the leaves are large enough to form at least a 5-6-leaf bunch.
- Cut the outer leaves first; this allows the inner, younger leaves to develop for later harvests.
- If you want to harvest an entire plant, use a sharp knife and cut the head off at 1 inch above ground level. The stem should grow another set of leaves.
- If spinach shows signs of bolting, harvest immediately: overly mature plants will taste bitter.

STORAGE

- Refrigerate spinach, unwashed, in a damp towel or plastic bag for up to one week. For best taste, use spinach within 4 days of harvesting it.
- For longer-term storage, spinach may be frozen. Blanch spinach for 1-2 minutes, rinse in cold water, drain well, squeeze lightly and pack into airtight containers such as freezer bags.



USE

- Rinse spinach leaves thoroughly in a cool water bath. Soil and grit tend to accumulate on the undersides of leaves so it may take several changes of water. Dry in a salad spinner or blot with dishtowels.
- Remove tough stems before eating or cooking spinach.
- Spinach can be eaten raw in salads, sandwiches, pasta, or substituted for basil in a pesto. Spinach can also be steamed, added to soups, stir-fries, sautés, crepes, quiche, lasagna or any other baked dish.
- Spinach cooks quickly. Be careful not to overcook by watching for the bright green color. Remove from heat and cool.

HOW MUCH DO I HAVE?

1 pound of spinach = 4 cups of torn leaves = 1½ cups of cooked = ½-¾ cups of cooked, squeezed dry spinach

SQUASH, SUMMER AND ZUCCHINI

SQUARE FOOT PLANTING: 1 plant per 3 square by 3 square block

SEED DEPTH: ½-1 inch

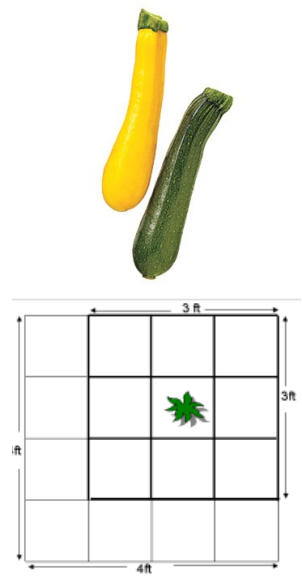
GERMINATION: 6-10 days

GROWTH

- Plant summer squash after the soil has warmed up in late May to early June.
- To plant, mound soil in the center of a 3 x 3-foot space about 4 inches high, then plant 1-2 seeds in the center of the mound.
- One or two mounds usually provide enough squash for one family.

HARVEST

- Summer squash and zucchini should be harvested when they are small and tender, before the seeds ripen and the skin toughens.
- When harvesting squash, leave about 1 inch of stem on the fruit. Carefully cut or remove fruit from the vine using both hands so as not to damage the plants.



SQUASH, SUMMER AND ZUCCHINI (CONTINUED)

- Harvest often so that plants keep producing.
- Squash plants can be mildly prickly: if you have sensitive skin, protect it with gloves or long sleeves.

STORAGE

- Squash dehydrates quickly and damaged or bruised squash deteriorates even faster. Refrigerate, unwashed, in a plastic bag or crisper drawer for up to one week.
- Refrigerate cooked squash in a covered container; it is best eaten within 2-3 days.
- Cooked, puréed summer squash may be frozen and later used as an addition to or as a base for winter soups. Freeze in an airtight container.

USE

- Rinse or wipe down squash if needed—no need to peel!
- Summer squash and zucchini can be eaten raw, cut into sticks or rounds, grated or thinly sliced directly into salads or slaws.
- Summer squash and zucchini can be steamed; grilled; sautéed; broiled; added to summer soups and stews, stir-fries and casseroles; or even mashed.

HOW MUCH DO I HAVE?

3 medium or 6 small squashes = 1 pound of squash = 1 $\frac{2}{3}$ cups of cooked and mashed = 2 cups of sliced, cooked squash

WINTER SQUASH

SQUARE FOOT PLANTING: 2 winter squash vines in a 1-foot by 4-foot row

SEED DEPTH: ½-1 inch

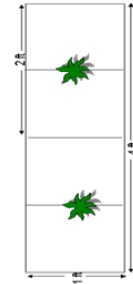
GERMINATION: 6-10 days

GROWTH

- There are many varieties of winter squash, including pumpkin, acorn, butternut, turban, delicata, and spaghetti.
- Set out transplants or direct seed after the soil has warmed up (early to mid-June).



- Winter squash really sprawls out so plan ahead. Side or corner squares work well and allow the vines to sprawl out into mulched pathways. Winter squashes with smaller fruits (like sugar pumpkins) can be grown on a trellis.



HARVEST

- Winter squash can be harvested when the rind is hard, the stems begin to shrivel up and dry, and the skin is too hard for you to poke through it with your thumbnail.
- Remove squash from vine with a sharp knife, leaving 1-3 inches of stem on the fruit.
- Cure before storing by placing in the sun for 10 days. Cover or put inside if there is any chance of frost.

STORAGE

- Do not refrigerate winter squash. Winter squash will store at room temperature for about one month. Store for several months in a dry, cool (50-55 degrees F), but not cold location.
- Do not pile squash on top of each other; instead, place squash in a single layer to avoid rotting. Bruised or damaged squash will deteriorate more quickly.

USE

- Typically winter squash is peeled, but this is not strictly necessary. Some varieties, like delicata and acorn squash, sport a thinner skin that can be left on and eaten as a good source of fiber.
- Winter squash are delicious sautéed, baked, roasted, steamed, puréed alone or with other root vegetables, and added to hearty soups, stews, muffins or pancakes.
- Acorn squash is delicious baked face-up with melted butter and brown sugar or maple syrup.
- Butternut squash makes an excellent “pumpkin” pie.
- Spaghetti squash can be halved, its skin pricked with a fork, and roasted; the flesh is done when it scoops out easily into spaghetti-like strings. Serve topped with tomato sauce, or with butter and shaved Parmesan.
- Seeds saved from pumpkins and other squashes can be roasted and then eaten.

HOW MUCH DO I HAVE?

Winter Squash: 1 pound of squash = 1 cup of cooked, mashed squash

Spaghetti Squash: 2 pounds of spaghetti squash = 4 cups of cooked strands

Pumpkin: 1 pound of pumpkin = 1 cup of cooked, mashed squash = 4 cups peeled and cubed squash

1 medium pumpkin = 5 pounds of pumpkin = 4½ cups of cooked and puréed pumpkin

SQUASH BLOSSOMS

HARVEST

- Squash plants produce both male (left in photo) and female (right in photo) blossoms. The female blossoms will eventually bear fruit, so you will want to harvest only the male blossoms. These can be found on the end of a stem, not on the end of a squash fruit.
- Select squash blossoms that have just opened or are about to blossom.
- To prolong freshness while harvesting, put the blossoms in a plastic bag or a quart-size yogurt container, with stems in about 2 inches of water.
- Blossoms are very delicate and crush easily, so handle gently while harvesting.

STORAGE

- Use blossoms the day they are harvested. If you are planning on stuffing the blossoms, it must be done within 1 hour of harvest; otherwise the blossoms will close up.

USE

- Blossoms should not be washed, but should be shaken to release any bees or insects feasting inside.
- Blossoms may be stuffed and baked, lightly battered and fried, or used to top pizzas or frittatas.



TOMATOES

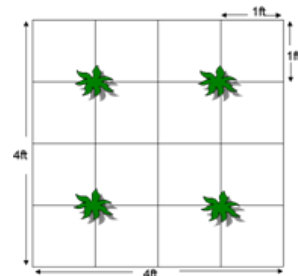
SQUARE FOOT PLANTING: 4 tomatoes in a 4-foot by 4-foot block

SEED DEPTH: not applicable, transplant only

GERMINATION: not applicable

GROWTH

- In order to develop mature fruit, tomatoes must be transplanted in New England. If you grow your own transplants, start seeds indoors in early April, 6-8 weeks before the estimated last frost date.
- Be sure your transplants are hardened off before you set them out. To harden them off, place transplants outside in the warm sunshine for a few hours at a time, increasing the length of time each day over the



course of a week or two, until you are able to leave them outside for a full day. Take transplants indoors overnight if temperatures are especially cold.

- Once your seedling or transplants have matured, plant them outside in late May to early June.
- Tomatoes are especially sun-loving and require consistently moist soil. When they receive inconsistent watering, tomatoes can develop blossom end rot, a calcium deficiency that causes the bottom of the tomato to turn black and decay.
- When watering, focus the water on the soil at the base of the plant; avoid splashing the leaves as this can encourage bacterial growth and leaf burn.
- Tomatoes benefit from staking or caging. This prevents the plant stem from snapping under its own weight.
- To ensure the biggest and best quality fruit, help direct your tomato plant's energies into fewer stems by pinching back suckers as they begin to form in the corner of the plant's main branches.
- Withholding water after mid-August will force the vines to ripen more fruit. Removing all young flower clusters after mid-September will help the remaining fruit ripen as well.

HARVEST

- Allow tomatoes to ripen on the vine for as long as possible. Pick fruit that are bright in color and slightly yielding if squeezed (gently!).
- Ripe tomatoes can usually be harvested by gently twisting them off the stem. For tomatoes wedged in next to other tomatoes by intersecting branches, use a scissor or a knife to free them.
- Know your tomato! Remember tomatoes come in lots of colors, ranging from peach and gold to purple and black, striped and solid. There are also many variations in size and shape — some that are perfectly round and others which form a tear drop.

STORAGE

- If tomatoes fall off the vine before they're ripe, place them in a cool (50-60 degrees F), dry location indoors and out of direct sun to ripen. A warmer location (60-70 degrees F) will speed ripening. Direct sun will harden the skins and can speed up rot.
- Perfectly ripe tomatoes should be eaten right away for best flavor, but may hold up to a week in a cool, dry location. Do not refrigerate. The cold will destroy their flavor.
- Damaged and cut tomatoes will deteriorate rapidly; use them quickly.
- Tomatoes can be frozen whole. Core tomatoes, place on a cookie sheet and freeze. When solid, place tomatoes in freezer bags and replace in freezer. Thawed tomatoes work well in purées, soups or sauces.
- Salsas, sauces, paste, and purées can be canned. Consult a trusted home preservation guide for detailed instructions.

TOMATOES (CONTINUED)

USE

- Tomatoes are fantastic eaten raw: sliced on a salad, a sandwich or with fresh mozzarella and olive oil, or added to guacamole or omelets.
- Tomatoes are very versatile — sauté, bake, broil, grill, stuff, add to shish kebab, and roast. Tomato chunks can be added to soups and stews, or tomatoes can be puréed as a soup base or stock, and of course made into amazing pasta sauces!
- Green, unripe, tomatoes can be breaded and fried for a late-season treat.

HOW MUCH DO I HAVE?

1 medium tomato = 1 cup of chopped tomato

2 large tomatoes = 3 medium tomatoes = 4 small tomatoes = 1 pound of tomatoes = 1-1½ cups of peeled, seeded, and chopped tomatoes = ¾ cup cooked tomatoes

OTHER CROPS YOU MIGHT TRY

When planting, be sure to follow the seed packet directions or the seedling tag for planting and harvesting instructions.

Artichokes

Bok Choy

Celery

Chinese Cabbage

Mustard Greens

Strawberries

Turnips

Water Cress

CHAPTER 6

HERBS AND FLOWERS

IN THIS CHAPTER

Most home vegetable gardens also contain a smattering of herbs and flowers to round out the pantry and to encourage pollinators. Each variety of herb or flower, like your vegetables, has its own growing preferences and uses. This chapter is dedicated to providing all the detailed information of how to grow, tend, harvest and make use of your herbs and flowers.

HERB STORAGE

There are two long-term storage options for herbs:

Freezing: This option best suits herbs with soft leaves, like basil, tarragon or parsley. Remove the leaves from the stems, wash to remove lingering garden grit and store in water in small containers (e.g. ice cube trays) for convenient use. For longest storage life, blanch in boiling water for a few seconds first, then immediately transfer to ice water before storing in containers. Try freezing herbs in olive oil instead of water for a quick sauce starter. (**Warning:** Do not store herbs in olive oil at room temperature. This can lead to botulism, a potentially fatal food poisoning.) Frozen herbs keep up to 6 months.

Drying: Drying your own herbs is fun, easy and wonderfully fragrant. Dried whole-leaf herbs will last up to 2 years and dried ground herbs will keep up to 6 months.

- First harvest your herbs. Do so in the morning when the oils that give them their flavor are most abundant in the leaves. You can safely harvest about three-quarters of the plant without killing it. If the plant is annual, like basil, harvest completely because it will not overwinter. If the leaves you harvest are particularly dirty, wash and pat dry well to avoid possible mildew growth.
- Next bundle your herbs, leaving room for air to circulate around each sprig. This is important, again, to prevent mildew growth. Wrap string around the bottom of the bundle, leaving about 5-7 inches of string hanging before tying off a knot.
- Hang your herbs on a clothesline or string or closet rod in a dry location away from direct sun. Hanging herbs in your kitchen may seem like a good idea, but smoke, oil particles and the competing fragrances that come from cooking will affect the herbs' delicate flavors. Direct sun will fade their colors. Find a spot in your home that's out of the way, like a dry attic, basement or closet.

- Tip: To keep dust off the herbs and collect any falling leaves, you can place the herbs in brown paper bags. Poke holes in the bags to allow for air circulation.
- Tie your herb bundles/bags to the clothesline. Check your herbs for dryness every other day and once they crumble in your finger tips, they are finished drying. This usually takes 1-3 weeks. For long-term storage, transfer the herbs to containers. Old spice containers, re-sealable plastic bags and glass jars all work well.

HOW MUCH DO I HAVE?

1 teaspoon of dried herbs = 1 tablespoon of fresh herbs

BASIL

Basil is an annual, bushy herb that adds delicate flavor and aroma to many cultural dishes of Greece, Italy, and the Near East. Basil is most commonly known for its role in pesto and tomato sauces.

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

GERMINATION: 5-10 days

GROWTH

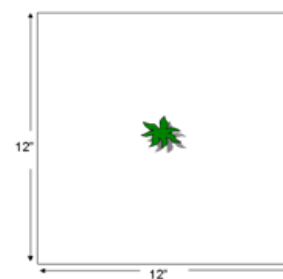
- Sow seeds or transplant after the last frost
- Pinch off flowers to encourage bushier growth and to prevent the plant from going to seed.

HARVEST

- When harvesting basil, cut it back to about ¼ inch above a node from which new stems and leaves will sprout. Leave enough foliage on the plant so it can continue growing healthily.
- Basil is not cold tolerant. Always harvest before a hard frost.

USE

- Basil's best flavor is found in fresh leaves, which can be cooked or eaten raw.
- Crush, chop or mince the leaves and add to recipes, or add whole leaves to salads.



- Basil pairs well with fresh tomato and mozzarella slices.
- Basil flowers are beautiful, edible, and also make a unique garnish.

CHIVES

Despite being part of the onion family, chives are fairly mild in flavor. They are a perennial herb, which can be eaten from top to bottom—the bulbs as mild onions, the leaves as a flavorful garnish and the flower heads sprinkled in salads or atop cream cheese.

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼-½ inch

GERMINATION: 7-14 days

GROWTH

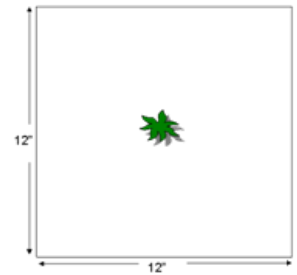
- Sow seeds or transplant seedlings in spring or fall.
- Chives prefer sun to partial shade.
- As a perennial plant, chives will form large clumps that return year after year. As they outgrow their squares, chives can be divided and portions transplanted to other locations.

HARVEST

- You can begin harvesting about 6 weeks after planting seeds, or as soon as established chives resume growth in the spring.
- Using scissors, cut outer leaves back to the base or snip off flower heads.

USE

- Use chives fresh or frozen; they do not retain their flavor well when dried.
- Minced leaves can be mixed into cream cheese, used in cooking or eaten raw. Flowers can be sprinkled on salads for a beautiful, slightly spicy garnish.



CILANTRO

Cilantro is a pungent herb with a unique, citrusy flavor. Some people perceive its flavor as soapy, which is due to the presence of aldehydes, a chemical compound also present in soaps and lotions. Cilantro grows two types of leaves; the lower ones resemble flat-leaf parsley, and the upper ones are delicate and finely cut. It is used in a variety of cultural cuisines, particularly Mexican, Chinese, Vietnamese, Thai, and Indian. Tiny white flowers form seeds, called coriander, have a sweet, lemony flavor and are a core ingredient in Indian curry.

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ½ inch

GERMINATION: 7-14 days

GROWTH

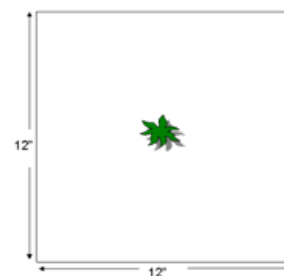
- Direct-seed spring through summer.
- Plant in full sun.
- Practice successive planting every three weeks or so for a continuous harvest since cilantro goes to seed quickly.

HARVEST

- Begin harvesting fresh leaves once the cilantro plant is at least 8 inches tall. To harvest, cut outer leaves, allowing the inner leaves to continue growing until the plant goes to seed.

USE

- Dried leaves lose their fragrance, but you can freeze them in water (or make cilantro pesto) for use later.



DILL

Dill is one of the oldest known herbs, native to the Mediterranean region and Asia Minor. Its aromatic leaves, seeds and flat seed heads of tiny greenish-yellow flowers are used to season fish, pickles, cabbage, potatoes and baked goods, soups, stews, and salad dressings. This easy-to-grow annual herb is not only beautiful, but also attracts beneficial insects to the garden.



SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

GERMINATION: 10-14 days

GROWTH

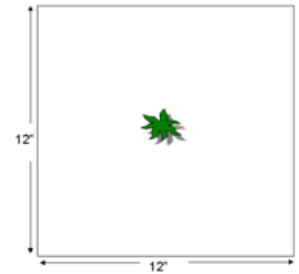
- Dill does poorly when transplanted, so sow seed outdoors after danger of frost is past.
- Plant in full sun.

HARVEST

- You can start harvesting dill leaves, often referred to as dill weed, as soon as a plant has 4-5 leaves.
- If you have many plants, you can harvest entire stalks or a bit of weed from a number of plants.
- Snip the fern-like leaves from the plant with scissors or pinch them off by hand.
- To harvest seed, cut stalks just before seeds ripen and turn a tan color. Dry indoors following directions on page 56.

USE

- Dill is a key ingredient in pickling, and can be tossed raw in salads.
- It pairs well with carrots, fish, white cheeses, potatoes, cucumbers and more.
- Dill is a natural breath freshener.



MARIGOLDS

Marigolds are native to North America and were once revered by the Aztecs in Mexico for their believed medicinal powers. They have since gained widespread popularity, whether incorporated into celebratory and religious ceremonies in India or cut for casual floral arrangements, because they are quick to bloom and easy to grow. Because the blooms begin early and continue right through to frost, they are often one of the final bursts of color in the New England garden. They come in a variety of hues, ranging from their best-known golden yellow to vibrant reds as well as pastel yellows and creams.

SQUARE FOOT PLANTING: 4 plants per square foot



MARIGOLDS (CONTINUED)

SEED DEPTH: ¼ inch

GERMINATION: 7 days

GROWTH

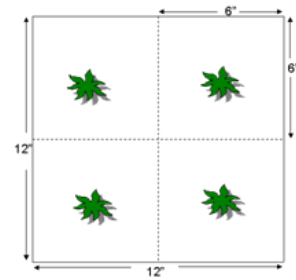
- Start seeds indoors in mid-April or direct sow seeds outdoors after danger of frost in late May.

HARVEST

- Deadhead spent blooms regularly to encourage continuous flowering until frost.

USE

- Marigold petals are edible and the flowers make excellent cut, border and container flowers.
- Their pungent scent repels unwanted insects from nearby vegetables while also attracting many beneficial insects.



MINT

There are many types of mint, the most well known being peppermint and spearmint. Square stems and jagged leaves most easily identify mints, which add a cool refreshing flavor to ice cream, fruit, desserts, and drinks. Dried mint is added to many Middle Eastern dishes and cooling yogurt drinks.

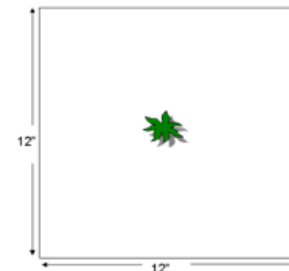
SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch (starting from runners is recommended)

GERMINATION: 10-15 days

GROWTH

- Mint can be started as a transplant or from seed in spring, however it is very easy to take a small piece from a friend's plant, stick it in the ground and watch it thrive.
- Mint is a perennial, meaning it comes back year after year, and it tends to be highly aggressive. We **strongly recommend** that you do not plant mint in your garden, as it can quickly overwhelm nearby plants. It is best to give it a contained location somewhere else or in a pot so it doesn't take over!



- In the fall: cut the plants to about 1 inch from the ground. If you're in a growing climate where the ground freezes in the winter, apply a thick layer of mulch to your mint patch, removing the mulch in the spring.

HARVEST

- When harvesting mint sprigs to put in your tea, try taking sprigs with big leaves so smaller leaves get more sunshine. Pruning your mint plant this way from time to time will encourage the plant to keep growing.
- The new, tender leaves and stems have the best flavor. Pinch stem ends off from the new stem branches. This keeps the plants compact and bushy. Be sure to leave 1/3 of the plant still intact to grow back.

USE

- Mix in with your favorite salad, coleslaw, or cold pasta or rice dishes for a zesty aftertaste. Chop and add to salsa or use to create mint jelly.
- Mint is known as an aid for digestion. Mint tea is also known to help calm hot flashes; drink warm in the winter or make iced tea in the hot summer months.

NASTURTIUMS

Nasturtiums are an edible flowering plant whose leaves and flowers have a peppery, tangy flavor. They grow either as vines or as compact bushy varieties that make excellent border and edging plants. Vining varieties work best along a support like a fence or light post, but can also be allowed to trail out of window boxes or hanging baskets. Nasturtiums come in a variety of colors including orange, gold, red, burgundy, and cream.

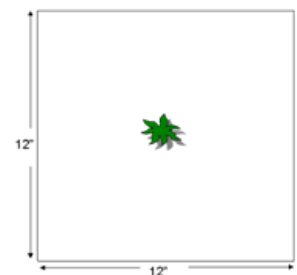
SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

GERMINATION: 14 days

GROWTH

- Start indoors in mid April or direct sow after the last frost at the end of May.
- Nasturtiums bloom best in cooler weather and often experience a burst of growth in early fall.
- Be on the lookout for aphids, as nasturtiums may attract them.



NASTURTIUMS (CONTINUED)

HARVEST

- Harvest nasturtium leaves when they are young, and pluck flowers as needed.
- Deadhead spent blooms to encourage continuous flowering.

USE

- Nasturtium leaves are a peppery addition to green salads and can be shredded for use on sandwiches.
- The flowers are a colorful garnish or salad ingredient and can be crystallized in sugar as a decorative dessert topper.

OREGANO

Oregano is a low-growing perennial herb with a spicy taste. It is stronger in flavor than marjoram, which is very similar in appearance. The leaves of these plants add a robust flavor to tomato sauces, potatoes and eggs. Oregano is excellent at stimulating the appetite and facilitating digestion.

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

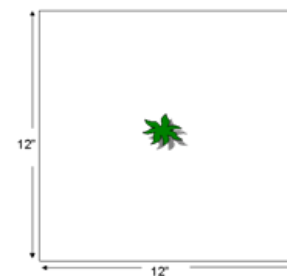
GERMINATION: 7-14 days

GROWTH

- Oregano is a sun-loving perennial plant.
- It can be started from seed or an existing plant can be divided and transplanted.
- Trim back your oregano before it flowers (approximately 5-6 weeks after planting) to stimulate more growth.
- Plants will self-seed easily so you can thin out 3- to 4-year old plants to keep the bed quality high.

HARVEST

- Oregano is a robust plant; harvest leaves as needed.



- To get the most flavor out of your oregano plant, harvest leaves just before the flowers bloom.

USE

- Leaves dry easily, store well and can also be frozen.
- Oregano is a versatile herb that can be added to soups, casseroles, pastas, stir fries, rice, homemade cheeses and meat marinades.
- When added to tea, oregano can help with indigestion.

PARSLEY

There are two varieties of culinary parsley: the Italian flat-leafed and the more common curly-leafed. Parsley offers not only wonderful flavor and rich color, but also outstanding nutrition. It is rich in iron and vitamins A and C and is a good breath freshener. Use parsley in soups, stews, sauces, as an edible garnish, or in salads.

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: ¼ inch

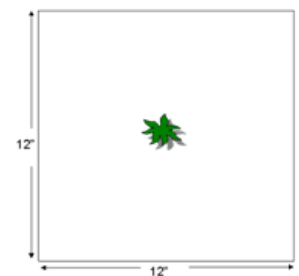
GERMINATION: 14-30 days (very slow to germinate!)

GROWTH

- Parsley is a biennial, which means it will last for two years.
- Parsley can handle cold weather, so start sowing seeds 2-3 weeks before the last spring frost in early to mid May.
- Parsley prefers full sun.

HARVEST

- Cut entire leaves from the outer portion of the plant to promote growth.
- To extend the freshness of your harvested parsley, place the cut stems in a jar of water in your refrigerator. Change the water daily.
- Plants can be dug up, set in large pots with extra soil, and brought indoors to a sunny window for a light winter harvest.



PARSLEY (CONTINUED)**USE**

- Curly parsley is commonly used as an attractive garnish.
- For cooking and chopping, flat-leaf parsley is preferable; it is easier to work with and has a better flavor.

ROSEMARY

Rosemary is a slow-growing herb and is very difficult to overwinter in New England. For this reason it is often grown in pots and over-wintered inside. Rosemary has narrow, spiky leaves and a distinctive piney scent; it is used to flavor lamb, pork, potatoes, herb butters, vinegars, and bread.



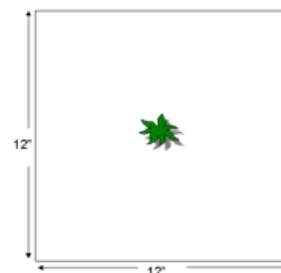
SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: not applicable

GERMINATION: not applicable

GROWTH

- Rosemary is extremely difficult to start from seed, so it is recommended that you purchase a transplant to set out after chance of frost is past.
- Because rosemary does not over-winter well, growing it in a container that can be brought in for the winter is most convenient.

**HARVEST**

- Use scissors or a knife to cut stems from the plant.
- Harvest no more than $\frac{1}{4}$ of the plant at a time.
- Remove the edible needles from the stem by running your thumb and forefinger along the stem in the opposite direction of needle growth.

USE

- Rosemary has a much more intense flavor and fragrance when used fresh.
- Rosemary flowers, also edible, are best eaten fresh and have a mild, delicate flavor.

SAGE

Sage is a perennial herb with aromatic leaves that are soft grey-green in color. There are also purple and variegated varieties. Sage aids in the digestion of fatty meats like beef, pork, veal, fish, lamb, poultry, duck, and goose, and is a delicious complementary flavor for all of these. Sage makes a wonderful tea with honey for curing sore throats.

SQUARE FOOT PLANTING: 1 plant per square foot

SEED DEPTH: $\frac{1}{4}$ - $\frac{1}{2}$ inch

GERMINATION: 14-21 days

GROWTH

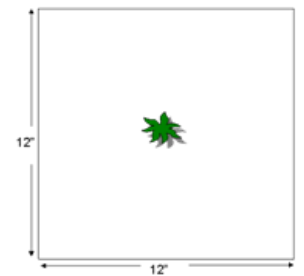
- Direct-seed or transplant in spring.
- Plants do well in full sun to partial shade.
- Be patient. Sage is slow to germinate, may take 1 – 3 weeks!
- Each spring, prune the heavier, woody stems from the plants.

HARVEST

- Harvest lightly during the first year to allow the plant to become established.
- When harvesting, leave a few stalks in place to allow the plant to rejuvenate.
- Plants can be dug up, set in large pots with extra soil, and brought indoors to a sunny window for a light winter harvest.

USE

- Sage complements many meats; winter squashes, like butternut or acorn; and stuffings or dressings.
- Sage can also be added to many beverages as a refreshing twist.



CHAPTER 7

PESTS

IN THIS CHAPTER

There are many practical, safe methods to control pests in your garden, but the foundation of all pest management is a healthy garden. Healthy plants are better able to recover from light insect damage and there is some evidence that suggests healthy plants are less likely to be infested in the first place, as insects struggle to digest the high mineral content found in the healthiest, most vigorous plant specimens. But if you do find unwanted pests in your garden, this chapter offers some organic, effective ways to manage them. For more detailed pest management, refer to a comprehensive insect guide such as the *Northeast Vegetable and Strawberry Pest Identification Guide* available from UMass Extension's bookstore.

NONCHEMICAL PEST MANAGEMENT

SOIL PREPARATION: Each fall, consider testing your soil to determine its nutrient content. Following the soil test recommendations, amend your soil with compost, composted manure, or other amendments to ensure that it has enough nutrients to support your plants. Healthy soil will yield healthy plants — the first line of defense against pests. Also, till the soil to expose pest insects to their natural predators and to turn any remaining plant debris into the soil, where it will decompose. This will deprive pests of shelter during winter.

PLANT SELECTION: Start your garden with disease- and pest-free seeds and plants. Many plant varieties are now resistant to disease strains or particular pests. Starting with resistant cultivars can spare you the trouble of treating infected or infested plants later on.

WEED CONTROL: Weeds not only take up nutrients that would be better spent on your plants, but they also provide habitat for pest insects. To prevent pests from establishing themselves, mow or cut back weeds before planting time and keep them consistently under control as plants develop. Allowing weeds to mature and later cutting them down may force pests to transfer directly to your plants.

BARRIERS: One of the most effective non-chemical strategies is to install physical barriers between pest insects and your plants. Collars or cardboard, plastic or metal are effective barriers for cutworms. Netting and row cover, while more expensive, are successful at preventing a number of insects as well as small animals like rabbits and birds from accessing your plants.

THE BAD BUGS: IDENTIFICATION AND MANAGEMENT



APHIDS

Description: Tiny, about 1/10-inch long with a pear-shaped body, long antennae and two tube-like projections from the rear of the abdomen. They come in a variety of colors and affect many different plants. Ants are often co-present, attracted to the sticky honeydew that aphids secrete.

Damage: Leaves will curl, pucker and turn yellow because the aphids suck juices from the leaves, fruit and stems.

Management: Spray plants vigorously with water every other day in the early morning for a week or so. This knocks the aphids off the plants. Spray with insecticidal soap for heavy infestations. Luckily, aphids have many natural predators including birds, ladybugs and lacewings.



CABBAGE MAGGOT

Description: A small, white legless worm about 1/3-inch long with a blunt end. They are found mostly on members of the cabbage family (cabbage, broccoli, collards, etc.) as well as on peas, radishes and turnips.

Damage: Infected plant will wilt during the midday heat and eventually die. Brown, slimy tunnels develop on the stem and roots where the maggot has entered the plant.

Management: Plant vulnerable crops with a 3-inch paper collar around them (paper towel rolls work well) with 1 inch buried in the dirt and 2 inches rising above. Cover crops with agricultural fleece to prevent the adult flies from laying their eggs in the soil near the base of the plant. Plant turnips or radishes as a trap crop. Next year, plant cabbage family crops in a different garden bed.



CABBAGE WORM OR LOOPER

Description: A green caterpillar with two white lines down its back, measuring up to 1 1/2-inches long. They're found primarily on members of the cabbage family (broccoli, cabbage, kale, collards, etc.). Small ball-shaped green droppings are an indicator that your plant is infested with cabbage worms.

Damage: They chew large holes in the leaves and may destroy the whole plant if it is young.

Management: Hand-pick and kill (squish or drown in salty or soapy water). Spray with bacillus thuringiensis (BTK). After harvesting, soak produce in a salt water bath for 15 minutes. Caterpillars will float to the top. Rinse produce with fresh water.



CUCUMBER BEETLE

Description: About 1/5-inch in length, yellow with a black head and 3 black stripes on the back. The spotted version is about 1/4-inch long, yellow with black head and 12 black spots on its back. They can be found mostly on cucumber, squash and melons.

Damage: Cucumber beetles chew on flowers, foliage and rinds of ripening fruit. They can transmit bacteria that causes the plant to wilt and die and can transmit cucumber mosaic virus.

Management: Hand-pick and kill (squish or drown in soapy or salty water). Plant radishes as a trap crop near squashes and cucumbers. Plant another crop for a fall harvest.



CUT WORMS

Description: Fat, grayish-brown caterpillars, 1-2 inches long, that curl up when disturbed. They feed at night and hide in soil during the day. Cut worms favor tomatoes, eggplant and peppers, but can also be found on beans, members of the cabbage family (broccoli, collards, etc.), lettuce and radishes. They are seen mostly in the early to late spring.

Damage: Cut worms encircle plant stems with their bodies in order to “cut” them off at the base. You may find your affected seedlings totally eaten or lying down on the ground with a severed stem.

Management: Place 3-inch-long paper collars (paper towel rolls and milk cartons work well) around vulnerable crops with 1 inch buried in the dirt and 2 inches rising above. Or, after planting transplant or when seed has germinated and grown a bit, stick a toothpick or matchstick in the soil leaning against the stem - the tough wood of the toothpick prevents cut worms from being able to cut through the stem. Maggot mats, squares about 10-inch by 10-inch placed around plants (slit half way so it slides around stem to reach middle of square), prevents moths and flies from laying eggs on the soil next to the plant. Carpet, tar paper, cardboard, or anything that survives a bit of weather will do.



FLEA BEETLE

Description: Tiny, 1/10-inch brown or black beetle that jumps like a flea when disturbed. Found on a wide variety of vegetables including beans, beets, broccoli, cabbage, collards, eggplants, peppers, radishes and tomatoes.

Damage: Numerous small, round holes found in the leaves, which, if the plant is very young, can result in a destroyed plant.

Management: Use agricultural fleece to cover and protect crops, since flea beetles are most damaging in the early spring. Use radishes, which they especially like, as a trap crop. Plant extra if you want some for yourself to eat!

Flea beetles prefer full sun so plant new seeds near larger crops that can provide shade.



JAPANESE BEETLE

Description: A large, metallic-green beetle with bronze wings, ½-inch long

Damage: Japanese beetles eat fruits and the leaves of a wide variety of plants; damaged leaves often look like skeletons.

Management: During the cool hours of the morning, shake or knock beetles off of plants into a jar of soapy water and drown. Cover crops with agricultural fleece. Birds and spiders really like Japanese Beetles. Beetle traps are commercially available at Agway and other stores that carry gardening items.



SLUGS AND SNAILS

Description: Fat and slimy, brown to orange-brown body, 1-2 inches in length; snail counterpart has a shell on its back. They feed only at night and hide in moist dark places during the day. Slugs and snails can be found on any vegetable as they are not picky eaters.

Damage: They chew large, ragged holes in fruit, leaves and stems. They will often leave trails of shiny, silvery slime on leaves and soil.

Management: Slugs and snails are easy to catch with beer traps. To make a beer trap, cut a 2-inch hole about two-thirds up the side of an empty margarine tub or plastic yogurt container. Bury the container so the hole is just above ground. Add 2-3 inches of beer (or a mixture of 1 tablespoon each yeast, flour, and sugar, and 1 cup water) and cover the container with its lid to seal the trap. Spoon out dead slugs daily.

Try planting marigolds, which slugs love, along your garden's border as a trap crop. Or deter them by spreading crushed eggshells around your plants. Slugs dislike the sharp edges. As always, hand picking is a reliable strategy.



SQUASH BUGS

Description: Adults are brownish black and ½ inch in length. Nymphs range in color from pale green to grey. They lay shiny bright orange egg masses on the underside of plant leaves. They are most often found on cucumbers, melons, pumpkins and squashes.

Damage: Small yellow and pale green patches appear on the leaves as the bugs suck the sap from the stems and leaves. Leaves can eventually wilt, dry up and turn black.



Management: Hand-pick and destroy adults and eggs. Collect eggs easily with a rolled piece of duct tape gently applied to the egg mass. Trap hatched bugs by laying a board on the ground near the affected squash plants. Squash bugs will shelter beneath the board overnight and can be captured during the cooler part of the day and crushed or drowned. For more severe infestations, spray the plant with insecticidal soap. Plant radishes and nasturtiums around squash plants to repel the bugs and plant another squash crop for a fall harvest.



SQUASH VINE BORER

Description: The larva is 1 inch long with a brown head and wrinkled, white worm-like body. Adult moth is 1½ inches long and looks like a wasp with a red body and black wings. Tiny dull-red eggs are laid in late spring on the base of the plant, on the underside of leaves or near the base of the stem. Larvae emerge and bore into the stem of the plant. They can be found on squash and pumpkins.

Damage: Squashes start to wilt even if they've had enough water. At the base of the plant there will be a hole filled with a yellowish material resembling sawdust. This indicates the presence of borers chewing.

Management: If a plant is already infested, use a sharp knife to slit the affected stem lengthwise above the borer's entry hole until you locate the borer. Remove the borer, cover the damaged portion of the stem with soil and keep the soil moist to encourage new roots to grow. To prevent infestation, look for eggs and destroy them. Spray the base of stems with *Bacillus thuringiensis* (BTK) once a week in late spring and early summer. Plant another crop for a fall harvest.



TOMATO HORNWORM

Description: Can get very large – 3-4 inches long and about the size of your finger. They have excellent camouflage: a light green color, 7 white and black V-shaped markings and a horn. They can be found hiding under the foliage or blending in with a stem. They can sometimes be heard chewing if you listen closely. Hornworms are primarily found on tomatoes.

Damage: Tomato hornworms chew holes in or consume the entire leaves. Fruit that is partially eaten and dark green or black droppings on the plant are all a

good indication that a hornworm is present.

Management: Pick them off the plant and drop into a jar of soapy water or squish with your foot. Since they are hard to see, you can spray the plants with water—the caterpillars will thrash around so that you can see them. If you find one with clusters of small white eggs on its back, leave it alone. Those eggs are from a parasitic wasp that will destroy the hornworm and then look for others to destroy. You can also spray plants with *Bacillus thuringiensis* (BTK).



WIRE WORM

Description: A hard-shelled worm, 1/3 - 1½ inches with a brown to yellow-brown jointed body found in the soil around the roots of the plant. Larvae bore into the seeds or plant roots, either preventing germination or stunting and killing the plant. These can be found around most vegetable plants.

Damage: Plant will wilt; small plants may die.

Management: Set a potato trap: spear pieces of potato with sticks and bury 2-4 inches deep in the garden, leaving the part of the stick showing above the soil. Set traps at 3-foot intervals—wireworms will burrow into the potatoes to feed. Destroy after 1 week. Replace as necessary.

THE GOOD GUYS: BENEFICIAL GARDEN RESIDENTS

Of course, not all insects are bad for your garden. Here are a few beneficial ones you won't want to squish because they prey on pests.



LADYBUG



LADYBUG LARVAE



LACEWING



PRAYING MANTIS



SPINED SOLDIER BUG

LADYBUGS eat aphids, which can suck the juices out of your plants.

LADYBUG LARVAE are also large consumers of aphids in the garden.

BEES are wonderful pollinators, important for fruit production in crops like squash and tomatoes.

LACEWINGS eat soft-bodied insects such as aphids, mealy bugs, small caterpillars and mites.

PRAYING MANTISES will eat any insect they can find.

SPINED SOLDIER BUGS eat many caterpillars and beetle larvae, including the Colorado potato and Mexican bean beetles. Be careful not to confuse them with adult squash bugs!

BRACONID WASPS consume the eggs of over 200 species of moths and are a parasite to the dreaded tomato hornworm caterpillar. These are an excellent beneficial insect to have in your garden because they naturally help control the pest population.

TOADS and **LIZARDS** are the natural enemy of a number of pest insects like slugs.

SNAKES help by controlling mice and voles. The most common snake around New England is the non-venomous garter snake.

EARTHWORMS move soil around and help bring air to plants roots (yes, roots need air!) and add nutrients back into the soil.



BRACONID WASP



TOAD



SNAKE



EARTHWORM

APPENDIX **A**

GLOSSARY

ANNUAL A plant with a life cycle that lasts one season; it will germinate, grow, flower and die the same year

BOLTING The tendency of a leafy plant, such as lettuce or spinach, to go to seed prematurely. This is a survival mechanism of the plant and is usually brought on by hot weather

COMPOST Organic matter, such as plant debris, kitchen scraps or paper products, that has undergone decomposition until it is reduced to a spongy, fluffy texture akin to rich soil

COMPANION PLANTING A planting technique that involves placing certain crop varieties near or far from others depending on how they affect each other while growing. Crops may be placed near to each other in order to deter pests, encourage pollination or improve plant productivity. They may be placed away from each other because they negatively affect each other's growth.

CROP ROTATION Often used in large-scale agricultural settings, but important in the home garden as well, this method of planting involves deliberately cycling the location of crops according to plant family. Not only does it allow the nutrients in the soil to replenish over time, but it can also help deter pest insects from becoming established in a given location.

DIRECT-SOW To plant seeds into the ground (as opposed to starting seeds in pots or trays indoors)

GERMINATE To sprout from seed

COLD-HARDY Refers to a plant's ability to withstand a hard frost, when temperatures are at or below 25 degrees for at least four hours.

HARDENING-OFF The process of gradually acclimating indoor plants or seedlings raised indoors to outdoor weather conditions.

HEIRLOOM A horticultural variety that has survived for several generations and will produce true-to-type if planted from saved seeds. Heirloom varieties are often particularly suited to their native climate and possess special tolerances or pest resistance.

HERBACEOUS Describes plants that have soft stems that die back to soil level at the end of the growing season.

MULCH A protective cover over bare soil that helps retain moisture, reduces erosion, provides nutrients and suppresses weed growth. It may be inorganic (plastic, fabric, newspaper) or organic (pine needles, straw, chopped leaves).

PERENNIAL A plant that lives for more than two years

SUCCESSION PLANTING Refers to several planting methods that maximize crop production during a growing season by making the most efficient use of space and timing. Four basic methods that can be used in combination are:

- **Planting two or more crops in succession:** After harvesting a crop, plant another crop in the same location.
- **Planting one crop successively:** Stagger several small plantings over time, rather than doing one large planting all at once, to create a longer, continuous harvest.
- **Planting two or more crops simultaneously:** Plant non-competing crops in close proximity. Often, the crops have different maturity dates and are good companion plants.
- **Planting different varieties of the same crop:** Select varieties with early, main season and late maturity dates so that, if planted at the same time, they'll produce a full-season, continuous harvest.

THINNING The process of removing extra sprouts of newly germinated seedlings to give sufficient space for the remaining ones to grow.

TRANSPLANT A young plant that is mature enough to be planted outdoors.

TRELLIS A framework that is used to support or encourage plants to grow up

VARIETY A specific type or kind of plant, sometimes referred to as a cultivar

VERMICULITE A natural material that, when heated and ground, expands into a lightweight, water-absorbent material that can be added to soil

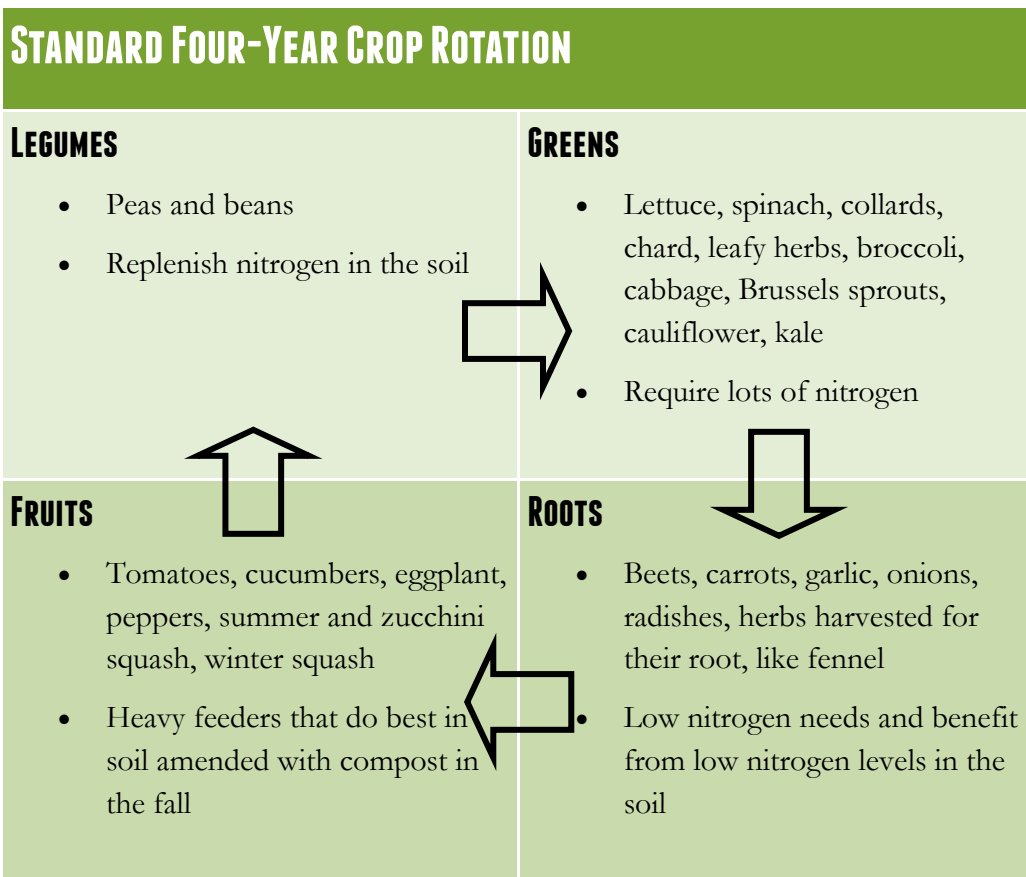
APPENDIX **B**

GARDEN PLANNING

Garden planning can sometimes feel overwhelming—especially if you are attempting to use many planting techniques at once. If you are trying to rotate your crops, plant in succession, and be aware of companion plants all at the same time, it can be difficult to squeeze everything into a single plan.

To avoid unnecessary frustration, start simple by focusing on one planting technique. The one that will give you the biggest bang for your plant production buck over time is crop rotation. This practice helps to protect your soil from being overworked and can be very easy to plan.

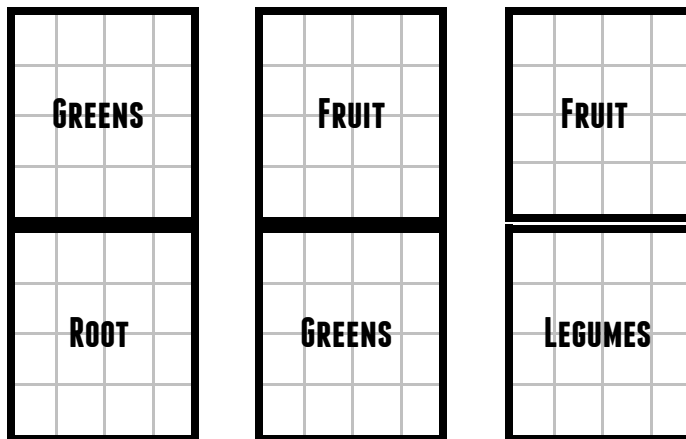
The goal of crop rotation is to change up the plant family growing in each location each year. There are many plant families, but some of them have similar soil needs so they are usually grouped into four larger categories: legumes, greens, fruits, and roots.



Here's another way to look at it:

	RAISED BED A	RAISED BED B	RAISED BED C	RAISED BED D
YEAR ONE	Legume	Greens	Root	Fruit
YEAR TWO	Greens	Root	Fruit	Legume
YEAR THREE	Root	Fruit	Legume	Greens
YEAR FOUR	Fruit	Legume	Greens	Root

If you don't have four separate raised beds, not to worry. Treat each raised bed as two distinct half-beds. For example, if you have three raised beds, a sample crop layout for the first year might be:



Aim to plant a little of everything so that each year in the rotation has a good variety of crops.

Within each half-bed, you can decide what specific vegetables you would like to plant, piecing them together like a jigsaw puzzle. Make your own plan or try one of these sample plans.

LEGUMES

Marigold	Bush Beans	Bush Beans	Peas (trellised)
Marigold	Bush Beans	Bush Beans	Peas (trellised)
Nasturtium	Bush Beans	Bush Beans	Peas (trellised)
Nasturtium	Bush Beans	Bush Beans	Peas (trellised)

If planting half a bed of legumes, try the plan at left, which includes flowers to attract pollinators and deter pest insects. Place support for climbing peas, such as a trellis, on the right side of the bed.

If planting more than half a bed, consider increasing the number of bean and pea varieties you plant.

GREENS

Chard	Chard	Collards	Collards
Sage	Oregano	Parsley	Basil
Lettuce (1st crop)	Lettuce (2nd crop)	Spinach (1st crop)	Spinach (2nd crop)
Lettuce (3rd crop)	Lettuce (4th crop)	Spinach (3rd crop)	Spinach (4th crop)

If planting two or more half-beds of greens, try dividing the beds into leafy greens versus cabbage family greens. The sample top left is leafy greens and includes successive plantings of lettuce and spinach. The sample bottom left is strictly cabbage family greens.

If planting one half-bed or less, try the plan below right for a mix of both leafy and cabbage family greens.

Brussels sprouts	Brussels sprouts	Kale	Kale
Cauliflower	Cauliflower	Kale	Kale
Broccoli	Broccoli	Broccoli	Broccoli
Cabbage	Cabbage	Cabbage	Cabbage

Brussels sprouts	Kale	Cauliflower	Collards
Chard	Broccoli	Broccoli	Cabbage
Sage	Oregano	Parsley	Basil
Lettuce (1st crop)	Lettuce (2nd crop)	Spinach (1st crop)	Spinach (2nd crop)

ROOT

Onion	Onion	Carrots (1st crop)	Carrots (2nd crop)
Onion	Onion	Carrots (3rd crop)	Carrots (4th crop)
Beets (1st crop)	Beets (2nd crop)	Radishes (1st crop)	Radishes (2nd crop)
Garlic	Beets (3rd crop)	Radishes (3rd crop)	Radishes (4th crop)

This layout is for one half-bed and includes successive plantings of carrots, beets, and radishes.

If planting two or more half-beds, consider trying a full half-bed of potatoes — another vegetable harvested for its root that's easiest to grow in a dedicated space with plenty of room for hilling up.

FRUIT

Cherry Tomato		Slicing Tomato
Eggplant	Eggplant	Slicing Tomato
Pepper	Pepper	

If you are planting two or more half-beds with fruit, try using the layouts on top left (nightshade family fruits) and bottom left (cucumber family fruits).

If planting only one half-bed, choose your favorites from both the nightshade and cucumber families. There won't be room enough to grow everything, so consider shifting this layout around each year to include plants you had to leave out the year before.

Cucum- bers	Cucum- bers	Winter Squash
Cucum- bers	Summer or Zucchini Squash	
Marigold		
Marigold		

Cucum- ber	Cherry Tomato	Eggplant
Marigold		Eggplant
Slicing Tomato		Pepper
		Pepper
		Winter Squash

Remember, the plans above are just samples and can be rearranged many, many ways to accommodate what you like to eat and how much of it you want to grow. You can also incorporate companion planting, using the chart on the opposite page to get the most from your plan. Use the blank grids in **Appendix G** to record your plans each year and make notes about what does and doesn't work out in **Appendix H: Garden Journal** for next year's plan.

APPENDIX **C**

PLANT COMPATIBILITY CHART

Just what do we mean by “compatible”? Vegetables and herbs that are compatible like to grow together and often help each other grow better, yield more or taste better. Plant them in squares next to each other or even in the same square if there is enough space. Of course, some plants are incompatible and will cause each other to grow poorly. These should be kept in different beds if possible or at least 4 squares away from each other.

VEGETABLE	COMPATIBLE	INCOMPATIBLE
Beans	cabbage family, carrot, chard, corn, cucumber, eggplant, peas, potatoes, borage, lovage, marigolds, nasturtiums, oregano, summer savory	chives, garlic, leeks, onions, shallots
Beets	bush beans, cabbage family, lettuce, onions, garlic	pole beans
Cabbage family	beets, chard, cucumbers, lettuce, onion, potatoes, spinach	pole beans, tomatoes
Carrots	beans, lettuce, onions, peas, peppers, tomatoes, chives, rosemary, sage, thyme	dill
Corn	beans, cucumber, melon, peas, potato, squash, marigold, parsley	tomatoes
Cucumbers	beans, cabbage family, corn, lettuce, tomato, marigold, parsley	potatoes, sage
Eggplant	beans, peppers, marigolds, thyme	
Lettuce	beets, carrots, onions, chives, dill, garlic, onions	cabbage family
Melons	corn, pumpkins, squash, marigolds, nasturtiums, oregano	
Peas	beans, carrots, corn, cucumbers, turnips, parsley	onion family, squash, tomatoes
Peppers	carrots, eggplant, onions, tomatoes, basil	
Spinach	cabbage family, lettuce, peas, radishes, onions	
Squash	corn, melons, pumpkins, radishes, borage, marigolds, nasturtiums, oregano, onions	
Tomato	asparagus, beans, carrots, cucumbers, onions, peppers, eggplant, basil, bee balm, borage, calendula, chives, parsley, thyme	corn, dill, cabbage family, potato

APPENDIX **D**

PLANT FAMILY CHART

Just like people, plants belong to genetic families. These families have a common ancestor and therefore wind up sharing some common characteristics. This could mean they look similar, or have similar growth habits and climate preferences. Most importantly, they tend to require the same nutrients from the soil and attract or repel the same beneficial or pest insects. Knowing which family your vegetables belong to helps you to plan your crop rotation so that you are not draining the same nutrients (and attracting the same bugs!) year after year in the same garden spot. Common vegetable varieties are included in the chart below.

FAMILY (LATIN NAME)	MEMBERS
Beet or Goosefoot (Chenopodiaceae)	beets, chard, spinach
Cabbage or Mustard (Brassicaceae)	arugula, broccoli, broccoli-raab, Brussels sprouts, cabbage, cauliflower, collards, cress, horseradish, kale, kohlrabi, mustard, pak choi, radish, turnips
Carrot (Apiaceae)	carrot, celeriac, celery, chervil, cilantro/coriander, dill, fennel, parsley, parsnip
Daisy or Sunflower (Asteraceae)	chicory/endive, Jerusalem artichoke, lettuce, radicchio, salsify, sunflower, tarragon
Cucumber or Marrow (Curcubitaceae)	cucumber, marrow, melon, pumpkin, summer squash, winter squash
True Grass (Poaceae)	corn
Lily or Mallow (Malvaceae)	okra (also cotton and cacao!)
Mint (Lamiaceae)	Basil, marjoram, oregano, sage
Nightshade or Potato (Solanaceae)	Eggplant, pepper, potato (white), tomato
Onion (Alliaceae)	Asparagus, chive, garlic, leek, onion, scallion, shallot
Pea and Bean (Fabaceae)	Beans, pea

APPENDIX E

PLANTING SCHEDULE

Timing is everything in gardening, so it's important to know when to start seeds indoors, transplant the seedlings or direct-sow seeds outside, and eventually harvest the produce. The planting schedule on the next page is adapted from those provided in Mel Bartholomew's *Square-Foot Gardening*. For additional schedules, including for a continuous harvest, please refer to this classic text.

Planting schedules are always based on the average last frost date for a given USDA hardiness zone. Because much of North Central Massachusetts is classified as zone 5b, the following chart dates are for that particular zone and an average last frost date of May 31st. However, the planting schedule can be easily adapted for other zones by researching the last frost date for that location and calculating planting times based on it.

Bear in mind that all planting schedules are, at best, guides. Every growing season is different, especially in New England. This makes it important to use your best judgment when deciding whether or not to transplant seedlings or direct-sow seeds rather than adhering strictly to the dates provided here. If the ground is still frozen or the weather is exceptionally chilly, it's better to wait a week and re-evaluate than plant according to a schedule.

KEY	
Start Seeds Indoors	S
Transplant Seedlings	T
Direct Sow Seeds Outside	D
Harvest	H
Indoor Growing Time	****
Outdoor Growing Time	— —

APPENDIX **F**

SEASONAL CHECKLIST

JANUARY-FEBRUARY

- Review the notes in last year's garden journal and make decisions about what to repeat, try, or discontinue this year.
- Draft a working garden plan (and revise as needed!).
- Organize seed stores and determine seed needs for the upcoming season.
- Place a seed order!
- Other:

MARCH

- Attend the Food Gardeners' Gathering (usually the first Saturday in March) and consider mentoring a new Growing Places gardener!
- Gather any materials needed to start seeds indoors, including containers, seed starter mix, trays, covers and plant markers.
- Gather materials and assemble support structures (trellises, stakes, twine, etc.) for climbing plants.
- Start seeds indoors, such as broccoli, cabbage, herbs, peas, spinach, cauliflower, lettuce and onions.
- Prepare the soil in raised beds as soon as weather permits (add compost if not added in fall).
- Begin the season's garden journal with a copy of the garden plan, a record of the crop varieties being planted, and notes on seeds being started indoors.
- Other:

APRIL

- Make repairs or upgrades to the raised-bed frame(s), garden fence, compost site, and/or water system.
- Install support structures (e.g. trellis for peas or beans) as needed.
- Research home composting and gather any needed materials.
- Start seeds indoors, including lettuce, chard, tomatoes, peppers.
- Direct-sow seeds, including peas, spinach, and chard.

- Transplant seedlings, including broccoli, cabbage, parsley, and spinach.
- Update the garden journal with a record of garden repairs, seeds started/planted, crop performance, weather conditions, and gardening challenges.
- Other:

MAY

- Start a compost pile.
- Install support structures (e.g. stakes or cages for tomatoes) as needed.
- Review how to identify common weeds from seedlings (Growing Times Newsletter, Vol. 10, Issue 3, available on www.growingplaces.org).
- Begin regular weeding and watering
- Start seeds, such as summer squash, cucumbers and muskmelons.
- Transplant seedlings, including cauliflower, leaf lettuce, onion sets, chard, summer squash, and tomatoes.
- Direct-sow seeds, including leaf lettuce, beets, carrots, radishes, bush and pole beans, corn, and summer squash.
- Begin harvesting leaf lettuce!
- Update the garden journal with notes on how seeds started indoors are doing, what plants have been transplanted or seeds direct sown, weather conditions and what challenges, if any, have come up so far.
- Other:

JUNE

- Research common beneficial and harmful pests (Plant & Pest Guide or Growing Times Newsletter, Vol. 10, Issue 2) and have management strategies ready.
- Check plant foliage for early signs of damage from pests and disease.
- Continue regular weeding and watering.
- Remove flowers from herbs to increase foliage production.
- Remove fall crops that have gone to seed.
- Transplant seedlings, including cucumbers, muskmelons, eggplant and peppers.
- Direct sow seeds, including cucumbers, muskmelons, peppers and winter squash.
- Begin harvesting broccoli, cabbage, herbs, spinach, cauliflower, leaf lettuce, radishes, and chard!
- Be mindful of successive planting times and replant squares as planned.
- Update the garden journal with notes on plantings, early harvests, crop performance, weather conditions, pests and pest management success (or failure!).
- Other:

JULY

- Continue to check for insect and disease damage.
- Research new strategies to manage pests as needed.
- Water, weed and harvest regularly.
- Practice good garden hygiene—remove spent plants promptly.
- Evaluate the current watering system and make adjustments if need be.
- Harvest broccoli, cabbage, herbs, peas, cauliflower, beets, carrots, chard, bush beans, summer squash and cucumbers!
- Replant squares with successive plantings as planned.
- Update the garden journal with notes on crop performance, the weather, the harvest and pests.
- Other:

AUGUST

- Continue to check for pest damage and disease—remove and dispose of damaged plant material in the trash.
- Compost dead, non-infested crops.
- Continue to weed, water and harvest regularly.
- Start researching preservation techniques and begin gathering necessary supplies, like canning jars, lids, freezer bags, storage containers or ice.
- Identify locations within the house for long-term food storage.
- Look up seed-saving instructions on www.seedsavers.org.
- Harvest herbs, peas, onions, carrots, chard, bush beans, pole beans, corn, summer squash, tomatoes, cucumbers, eggplant, muskmelons, peppers, and winter squash.
- Update the garden journal with notes on the harvest, pest issues, and other observations.
- Other:

SEPTEMBER

- Attend Growing Places' Annual Garden Tour & Harvest Party!
- Research season extension do-it-yourself projects (e.g. low tunnels or cold frames) and gather needed materials.
- Begin preserving the harvest surplus.
- Begin saving seeds.
- Continue garden maintenance: remove spent plants, manage pests, weed, water and harvest regularly.

- Harvest herbs, chard, pole beans, summer squash, tomatoes, cucumbers, eggplant, musk melons, peppers, and winter squash.
- Note the season's best performers, the varieties that were the most work, and any thoughts for next year in the garden journal.
- Other:

OCTOBER

- Do a thorough fall clean-up: harvest any remaining produce, pull up plants as they die, composting what is not diseased and trashing what is.
- Save seeds from top performers.
- Build a low tunnel or cold frame to extend the season (See www.johnnysseeds.com for low-tunnel construction tips.).
- Watch for frost warnings and protect the garden with light cover (e.g., old sheets).
- Collect a soil sample and have it tested by a reputable lab (e.g., UMass Extension Services).
- Gather and add amendments based on the soil-test results.
- After the garden has been put to bed, clean, repair and store garden tools and equipment.
- Make any needed repairs to the raised-bed frame or fencing.
- Preserve the extra harvested produce.
- Plant garlic or other fall bulbs before the ground freezes.
- Request seed catalogs as they become available for next season.
- Update the garden journal with a record of repairs made, the soil-test results and amendments made, and thoughts for next year.
- Other:

NOVEMBER-DECEMBER

- Look back over the season and journal ideas for next year.
- Read gardening books, magazines, and blogs for ideas!
- Harvest greens, kale, chard and other goodies in your low tunnel!
- Other:

APPENDIX **G**

BLANK GARDEN PLANS

YEAR: 20 __ __

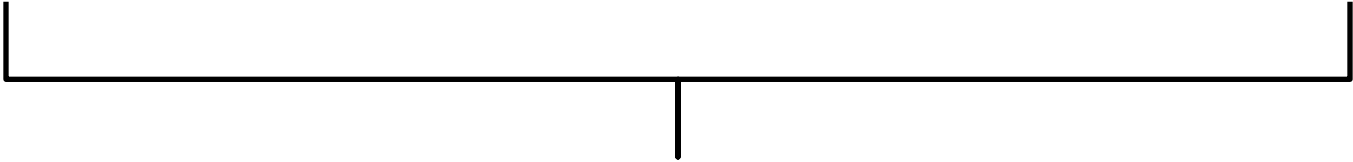
SPRING | SUMMER | FALL

RAISED BED # __

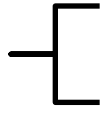
NOTES:

APPENDIX **H**

GARDEN JOURNAL



Keep notes here on crop varieties, weather conditions, pest and disease occurrences and thoughts for next year.



Appendix I

English/Spanish dictionary

I. Vegetables/Hortalizas

Beans (bush): Habichuelas (frejoles, perotós) enanas

Beans (pole): Habichuelas (frejoles, perotós) trepadores

Beet: Remolacha (betarraga)

Broccoli: Brócoli

Brussel Sprouts: Coles de Bruselas

Cabbage: Col (repollo)

Carrots: Zanahorias

Cauliflower: Coliflor

Chard: Acelga

Collards: Col común/berza

Corn: Maíz

Cucumber: Pepino

Eggplant: Berenjena

Garlic: Ajo

Kale: Col rizada

Lechuga: Lettuce

Melons: Melones

Okra: Quimbombó

Onion: Cebolla

Peas: Arvejas (guisantes, chicharos)

Pepper: Pimiento

Potato: Papa

Raddish: Rábano
Tomato: Tomate
Spinach: Espinaca
Squash (summer): Calabaza (zapallo) de verano
Squash (winter): Calabaza (zapallo) de invierno
Squash blossom: Flor de calabaza
Zucchini: Calabacín

II. Herbs/Hierbas

Basil: Albahaca
Chives: Cebollín
Cilantro: Cilantro
Dill: Eneldo
Marigold: Clavel de moro
Mint: Menta
Nasturtiums: Capuchina
Oregano: Orégano
Parsely: Perejil
Rosemary: Romero
Sage: Salvia

III. Insects/Insectos

Aphid: Pulgón
Bees: Abejas
Braconid wasps: Avispas Bracónidas
Cabbage maggot: Larva de repollo
Cabbage worm/looper: Gusano/oruga medidora del repollo
Cucumber beetle: Escarabajo del pepino
Cut worm: Gusano cortador
Earthworm: Lombriz de tierra
Flea beetle: Escarabajo de pulga/perforador de hojas
Japanese beetle: Escarabajo japonés

Lacewing: Crisopa

Ladybugs: Mariquitas

Ladybug larvae: Larva de mariquita

Praying mantis: Mantis religiosa

Slugs, snails: Babosas, caracoles

Snakes: Serpientes

Spined soldier bug: Cinche depredadora

Squash bug: Escarabajo de la calabaza

Squash vine bore: Taladro de la calabaza

Tomato hornworm: Gusano del cuerno del tomate

Toads, reptiles: Sapos, reptiles

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Growing Places Garden Project is a community-based nonprofit organization.