



AN INTRODUCTION TO  
GARDENING  
A Twelve Part Workshop  
Curriculum

# ABOUT THIS RESOURCE

The Introduction to Gardening Curriculum is intended for non-profit practitioners and community members who have little experience with gardening or garden program coordination, but want learn and teach others basic gardening skills.

The curriculum is designed to be accessible to all. We use plain language and avoid technical jargon wherever possible. The twelve part workshop series follows the seasons and covers everything you need to know from planning your garden in the spring, to putting it to bed in the fall.

Each topic includes a facilitators guide to help with the devilery of the workshop and and info sheet to share with participants.



# TABLE OF CONTENTS



Workshop #1: The Growing Calendar

Workshop #2: Seed Starting

Workshop #3: Garden Planning

Workshop #4: Garden Preparation

Workshop #5: Companion Planting

Workshop #6: Succession Planting

Workshop #7: Plant and Garden Care

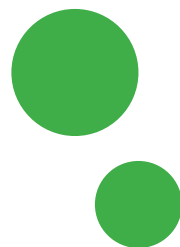
Workshop #8: Harvesting from the Garden

Workshop #9: Composting

Workshop #10: Extending the Growing Season

Workshop #11: Making a Lasagna Garden

Workshop #12: Putting Your Garden to Bed







# THE GROWING CALENDAR

## Facilitator's Guide

*Objective:* To teach participants how to use a growing calendar - so that they will be able to know when and how to plant the vegetables they would like to grow in their garden.

### Activity #1

The growing calendar is an important tool for gardeners to learn to use. This workshop works well in the lead up to the growing season. The best activity for this workshop is to have participants plant a virtual garden using the information that they have learned from the info sheet and the teaching portion of the workshop.

Prior to the workshop, collect images of common vegetables that are planted in Nova Scotia, as well as some more obscure varieties that gardeners might have grown in their home country. If you have the time its best to laminate these images so they can be used again. Have all of these images ready to be planted in the virtual garden.

On 4 pieces of bristol board or chart paper, make space for each of the 4 planting periods: indoor, spring, summer, fall. Give each participant a handful of veggie images and have them 'plant' those vegetables in the appropriate period by taping them to the bristol board or chart paper. Having rolls of tape ready in advance is a good idea.

Once participants have completed the activity, correct errors on the board as a group, and move vegetable images to the correct planting period where necessary. Each participant should be given a Growing Calendar to take home with them.

### Supplemental Information:

See the resource booklet for a copy of the Growing Calendar.



### Time Required:

1.5 - 2 hrs

### Materials Needed:

Growing calendar  
Bristol Board or Chart Paper  
Images of vegetables  
Tape





# THE GROWING CALENDAR

## Info Sheet

### Planting Periods

Many beginner gardeners think that there is one time for planting and one time for harvesting, but a more seasoned gardener knows that throughout the growing season there are ongoing cycles of planting and harvesting. The growing calendar helps to teach beginner gardeners when and how to plant. Broadly speaking there are four planting periods gardeners must be aware of: indoors, spring, summer and fall. Indoor planting takes place between March and May. Spring planting takes place throughout late April to June. Summer planting from June to Mid-August and fall planting from mid-August to October.

### Indoor Planting

Plants that traditionally come from hotter climates often have to be started indoors in Canada because of our shorter growing season. These heat-loving plants include many of our most common garden favourites like tomatoes and peppers. Also plants like okra, long-beans, Asian eggplant and many other world crops must be started indoors, to extend the growing season, to ensure enough time to reach maturity. These plants are then planted out of doors in the summer summer planting period after the threat of frost.

### Spring Planting

The spring planting starts in late April and May with crops like onions, peas, spinach and radish. Later in this period lettuce, carrots, beets, chard, kale and other cold hearty crops can be planted. These plants like the low temperatures do well with heavy rain, and cloudy weather. In the height of summer, if planted, these crops will either do very poorly, or not grow at all. Because these plants like cool weather, many of them can again be planted in the fall.



### Planting Periods

#### Indoor - March to May

Tomatoes, peppers, eggplants

#### Spring - Late April to June

Lettuce, greens, radish, spinach, peas

#### Summer - June to Mid-August

Tomatoes, peppers, eggplants

Zucchini, squash, beans

#### Fall - Mid-August to October

Lettuce, greens, radish, spinach,  
garlic



**Companion Planting**

Knowing when and how to plant vegetables in your garden is an important skill. Also, knowing what sorts of vegetables to plant together can be equally helpful when planning your garden.

Some plants have beneficial relationships when planted together, whereas other plants can have negative effects on one another if planted near each other.

Understanding and maximizing these positive relationships is called companion planting. For more information see Workshop #5.

*Summer Planting*

The summer planting is when heat loving plants are planted in the garden. This includes plants that were started indoors in the winter like tomatoes, peppers and eggplants, which are then transplanted out into the garden. Some heat-loving plants like zucchini and squash can be started indoors in the spring or direct seeded in the summer. However, zucchini, squash, beans, corn and many other heat loving crops can all be direct seeded during the summer planting. See the growing calendar for more details. In the early part of the Summer Planting, plants like beets, carrots and turnips can still be planted for a late harvest.

*Fall Planting*

The fall planting mirrors the spring planting. As temperatures begin to drop, crops that were grown in the spring can once again be planted. The fall planting includes radish, peas, spinach, and garlic. Cold hearty plants like kale can be grow as late as November and can even withstand frost.

*Succession Planting*

Some crops can be planted throughout the growing season –ranging from the spring all the way to the early fall. Quick growing crops can be planted and harvested two or more times throughout the year to ensure a steady supply of vegetables. This is called succession planting. These plants include: lettuces, greens, mustards, and kale. Broccoli and cabbage for example, have an early planting and a late planting. See Workshop #6 for more information on this topic.







# SEED STARTING

## Facilitator's Guide

*Objective:* To teach participants how to make a potting mix and how to start seedlings indoors.

### Activity #1

Making the potting mix – Introduce all of the ingredients and the role they play in the fertility of the mix. In a large 30 litre bucket, gradually add each of the ingredients and stir together to make the mix. As you go, you may find that the mix is rather dry or dusty. If so, be sure to wear a mask and spritz mixture with spray bottle to moisten. Once adequately mixed, begin adding soil to the cells of the seed trays to prepare for planting. Pack the soil gently into the cells. Don't compact the soil too much, but also make sure that cell is firmly packed with potting mix.

- 1 Part Peat Moss or Mature Compost
- 1 Part Garden Loam or Top Soil
- 1 Part Clean builders sand or perlite

### Activity #2

Now that your seed tray cells have been filled with potting mix. Pick a variety of seeds to plant in your tray. Before planting any seeds, place a marker in the area where you will be planting that clearly states the seed variety, the date, and the number of cells you have planted that variety in. Look on the back of the seed package for planting instructions, primarily depth. If there is no planting information, refer to a planting chart, or place the seed at a depth twice its size. This is generally a safe rule of thumb. Add approximately two seeds per cell to ensure the germination of at least one. Once they have sprouted, cull the weaker seedling to make more room for the more dominant plant. Place a thin layer of compost over the top of the cells and water generously with the spritzer. As plants sprout, discontinue spritzing and water from below – partially filling the trays to allow roots direct access to water.



#### Time Required:

1.5 - 2 hrs

#### Materials Needed:

- Seed trays
- Potting mix
- Tags and/or row markers
- Markers
- Seeds
- Spray bottle
- Planting calendar





# SEED STARTING

## Info Sheet

### Potting Mix

Your growing medium is the most important part of seed starting. Seedlings need lots of nutrients to ensure that they grow into healthy plants. Many professional farmers and gardeners make their own 'potting mix' – which is made up of various ingredients and amendments such as top-soil, sand, compost, peat-moss, coir, lime, greensand, bone-meal and/or bloodmeal. Others recommend vermiculite and/or perlite to improve porosity and drainage.

You can also buy potting mixes from your garden centre which include many of these ingredients. Be sure to read the ingredients list on the potting soil to make sure that no chemical fertilizers have been added. The ingredients listed above provide more than enough food for plants, making chemicals unnecessary. If a potting mix does not have chemical fertilizers on the ingredients list – it most likely is organic. If you wish to buy certified organic potting mix, expect to pay more.

### When to Plant

When to plant depends on what you're planting. Some warm weather plants (tomatoes, peppers, eggplants) must be started indoors, while more cold hearty plants (radish, beets, carrots) can just be direct seeded outdoors. To the right, we have provided a few common examples of plants that are started indoors, and plants that are started outdoors. Some plants can be started indoors or outdoors. Gardeners will start these plants indoors to give them a head start, especially if they have a shorter than average growing season. Refer to a [\*\*growing calendar\*\*](#) in the resource manual for more information.



#### Start Indoors

Tomatoes, Peppers, Eggplant, Peppers, Cucumber, Broccoli, Cauliflower, Cabbage, Head Lettuce, Zucchini, Squash

#### Start Outdoors

Beets, Carrots, Beans, Peas, Turnip, Radish, Leaf lettuce, Pak Choi, Bok Choi, Zucchini, Squash



# 3

## SEED STARTING

### *Info Sheet*

#### Where to Buy Seeds

It is best to purchase seeds that are organic, grown locally, and adapted to the specific climate of the region. Two great sources for seeds in Nova Scotia are Halifax Seed: <https://halifaxseed.ca/> and Annapolis Seeds: <http://www.annapolisseeds.com/>. Both companies have online catalogues with lots of great seeds to choose from.

#### *How to Plant Seeds*

In your planting trays place 1-3 seeds per cell. This ensures that if one seed does not germinate that another will. Once seeds emerge, pick the most vigorous of the bunch and remove the others. Be ruthless, crowding will damage your plants. For each vegetable type you plant, make sure to clearly label that section of the tray, including the name of the varietal, and the date you planted. This information is helpful in identifying your plants later on, and to monitor their success as they grow.

#### *Caring for Seedlings*

Seedlings require the same basic elements that regular plants do: light, water and nutrients. Without adequate light, whether natural or from a grow light, plants will become spindly and weak, resulting in poor yields or outright failure. Seedlings should have a minimum of 6-8hrs of light per-day, and a maximum of 16hrs.

Spritz seedlings until they germinate, and then water from below to prevent mold and damage to seedlings. Don't over water. Soil texture should be that of a rung out sponge. Your soil mix should provide enough nutrients for you plants to prosper, but if they seem to be struggling, you can top-dress with organic fertilizer or compost.

#### *Transplanting*

For most seedlings started indoors, they are transplanted out once the risk of frost has passed. This depends on your climate, but in Nova Scotia this is late May to early June. However, before transplanting out-doors, warm weather plants often have to be **potted up** and **hardened off**. Potting up refers to transferring the semi-mature seedling from its smaller planting cell, to a larger pot to allow more nutrients and space to grow. Hardening off is the process of preparing the plant for the harsh transition from indoors to outdoors. This begins by placing a fan on them to strengthen their stems, to eventually placing them outdoors for a few hours a day to toughen them up for the harsh realities of the outside world.



# 1

## GARDEN PLANNING

### *Facilitator's Guide*

*Objective:* To help gardeners better maximize their growing space through the development of strategic garden planning skills and techniques. Participants will get a basic introduction into what to plant in their garden, how, and when.

#### *Activity #1*

Make your own virtual garden: On a piece of blank paper have each participant sketch out their garden plan. Participants are asked to take note of the considerations outlined in the workshop to design and then explain their garden plan. Facilitator may choose to allow them to work in small groups or individually. When they have finished, ask one or two to present to the class. As a group, determine the pros and cons of the garden plan.

#### *Activity #2*

Fix my garden: Facilitator presents a garden plan to the group that is flawed. Together, facilitator and group go through the plan to identify and correct errors. As a group, team designs a new, better planned garden.



#### **Time Required:**

45 mins. to 1 hr.

#### **Materials Needed:**

Markers  
Chart paper  
Growing calendar  
Companion planting chart

#### **Supplementary Materials:**

See Appendix 1 for:  
Growing calendar  
Companion planting chart





## GARDEN PLANNING

### *Info Sheet*

#### *The Growing Area, What to Plant, and When*

In our previous workshops we talked about preparing your garden space, what to plant and when. Ideally, your growing area should receive full sun, have well fertilized soil (organic), and good drainage. Whether you have a shady area or a site that receives direct sun all day, will determine what you plant. Some plants do well in cooler temperatures, while others need warmer temperatures to thrive. For when to plant refer to a planting calendar. What to plant will largely be determined by your own preference, what the local climate permits and the amount of space you have to grow.

#### *Placement, Spacing, and Positioning*

The sun rises in the east and sets in the west. Therefore the south west corner of your garden will receive the most sun. Make sure to place taller plants on the far side of the garden to ensure that you do not shade out other smaller plants. Taller plants often require supports or trellises to keep them upright. It is much easier to build supports for plants before they have grown out of control so plan ahead. It is good practice to plant from tallest to smallest from west to east to get maximum sun exposure.

#### *Planting in Rows and Labeling*

The purpose of planning your garden is to have a clear idea of what will happen as it develops and to avoid any possible problems which might come along. A neat garden is much easier to deal with than a messy one. Planting in straight rows is one of the easiest ways to keep your garden tidy and easy to understand.



#### **Companion Planting**

Companion planting is based on the concept that when planted together certain plants can be mutually beneficial. Alternatively, some plants when planted together harm the other plant or hinder growth. Companion planting is all about maximizing those beneficial relationships in your garden. We'll learn more about companion planting in a later workshop.



### Succession Planting

Succession planting means sowing and harvesting two or more crops in the same area in one season. Many fast growing plants like arugula, lettuce, mustards, peas and radish can be planted in succession. By planting say lettuce every week or every second week, a gardener can guarantee a steady supply right into the warmest months of summer. The point here is, don't plant your entire garden area all at once, leave space for successive plantings.

Make sure to label each row with the name of the variety and the date. By planting in rows you are able to determine what you meant to plant and what is a weed. Anything that is not in the row can be weeded out to allow the seed you planted to flourish. An easy trick to get straight rows is to run a piece of string the length or width of your row, and trace alongside it with our finger or other instrument. Then measure the desired distance between rows and repeat. Finally, having the date the seeds were planted on the label will help to monitor the progress of the plant. We'll talk more about this in the harvesting workshop.

### *Spacing and Arrangement*

Each plant needs a specific amount of space in which to grow. Logically, large plants require more space than smaller ones. When planning your garden make sure to leave adequate space for each to flourish. For example, a tomato plant needs approximately 2.5 ft in each direction. But smaller plants need their space too. When planting seeds make sure to refer to the back of the package for the spacing between seeds and rows. If seeds are planted too closely they will suffocate one another and are unlikely to reach their full size. Most gardeners plant seeds heavy and return to thin their rows. Thinning just means removing every second or third sprout to make more room for plants to thrive.

### *Making a Sketch*

With all this information to consider it can get a bit confusing. I find it is best to make a couple sketches of your garden to get a good idea of where things will go, and how much you can fit. This is where a growing calendar and a plant spacing chart can come in handy. See the resource manual for both of these materials.





# GARDEN PREPARATION

## Facilitator's Guide

*Objective:* To teach participants the basic skills required to prepare their garden bed for planting.

### Activity #1

Review info-sheet and facilitate conversation on garden preparation. What do participants know about garden preparation? How do they do it? Leave space for participants to share their ideas.

Take your group to the garden space and begin the process of preparing the garden, as indicated on the info-sheet. Be clear to point out each step, allowing participants the opportunity to be involved at each stage.



### Time Required:

1 to 1.5 hrs

### Materials Needed:

- Garden gloves.
- Trowels/hand-tools.
- Shovels\*
- Rakes\*
- Compost
- Manure

\*Depending on the size of your garden you make not need rakes or shovels.



# 2

## GARDEN PREPARATION

### *Info Sheet*

#### *Getting Started*

How you start your garden in the spring time will depend on whether you are starting a new garden or whether you have an already existing bed. Starting a new garden requires significant planning and work to get it up and running. The gardener must identify the best growing area, remove or suffocate sod, decide whether they will have an in-ground or a raised bed, and add soil, compost, manure or other amendments. If you are starting a new garden see the **Garden Planning** workshop for more information.

In this workshop we will talk about preparing your already existing beds, and how to get them ready to plant again.

#### *What's Happening?*

Before getting started, take a moment to figure out what is happening in your garden bed. Are there perennial plants that need to stay? Are there plants from last year that need to go? What are weeds, and what a valuable crops you want to keep? Once you've figured out what's happening in your garden, you can start removing weeds and preparing the soil to be planted again.

#### *Removing Weeds*

Some smaller weeds can be plucked from the ground one by one, but most often when preparing your garden, it is advisable to turn the soil to loosen roots and more easily remove unwanted plants. Turning the soil simply means inserting your shovel or pitchfork into the soil and turning it over to expose the roots of plants. Repeat this process across the entire area of the bed, removing all weeds as you do. Gently shake soil from the roots as you move through the bed.



#### **Quick Tips**

When putting your garden to bed in the fall apply a sheet mulch to your garden in the fall to ensure that your bed is weed free and tidy for the next season. Sheet mulching simply means adding a layer of cardboard or landscape fabric to the surface of your bed, and then covering it up with leaves, woodchips or any other mulch to hold it in place. This protective covering protects soil from erosion and prevents weeds from establishing themselves in your garden.



### Ongoing Maintenance

Ongoing maintenance of your garden should be easy from this point forward. If you've planned your bed wisely, you will only need to weed between your rows, thin and prune vegetables where necessary. If you are doing second and third plantings in the same soil, you should fertilize with compost or manure before replanting.

### *Fertilizing and Amending*

After a full garden season has expired, soil is left tired and lacking in nutrients. In the fall, before putting your garden to bed, you should apply a layer of compost or other nutrient rich medium to increase the health of your soil. Repeat this process once again in the spring. Once all weeds have been removed from the bed, add a generous layer of nutrient rich material to your garden bed. This can be compost, manure, triple-mix, or other fertilizers like seaweed extract. Avoid chemical fertilizers as they are bad for your health and the health of your soil.

You may also choose to add other amendments to your soil to help up the mineral count of your garden. Common amendments include lime, phosphorous and calcium.

### *Preparing the soil to plant*

Once you have amended your garden, work your fertilizer into the existing soil by once again turning the soil. Once the nutrient rich material has been adequately mixed into the garden, use a garden rake to flatten the surface of the bed. As you do so remove any large debris and break down any big chunks of dirt. Your bed should resemble a table top, not a tent or a dome. A flat surface helps to guarantee even distribution of moisture, avoids pooling of water, and prevents unnecessary run-off and erosion. Once your garden has been prepared, you may begin planning and planting your bed.





# COMPANION PLANTING

## Facilitator's Guide

*Objective:* To

### Activity #1

The best way to demonstrate companion planting is to conduct a planting activity. In advance purchase any seeds or seedlings necessary for such an activity. Using the **Growing Calendar** and the **Companion Plant Chart** found in the **Resource Manual**, have participants plan out their garden based on what you have available. Have participants decide what they want to grow, what plants grow well together, and what plants grow poorly together. Once the garden is planned, have participants plant out the garden area, offering support where necessary. Finally, have a discussion on how this method can be practiced in participants' own gardens.

### Activity #2

If you don't have access to a garden space, or it's a rainy day, this workshop can still work well indoors. Once you've covered the basics of Companion Planting on the info-sheet, have participants plant a 'virtual garden.' In groups or as individuals, have participants design their own garden using the companion plant chart. You supply paper cut outs of vegetables, or supply colored markers and have them draw out their garden. As participants map out their beds circulate around the room and offer advice and suggestions.

Once everyone is finished, pick one or two examples and review them with the group. Have participants point out errors and correct as a group using the companion plant methods you've just learned.



**Time Required: 2 hours**

#### **Materials Needed:**

Plants to transplant and/or seeds  
Trowel  
Gloves  
Growing Calendar  
Companion planting chart



*What is Companion Planting?*

Companion planting basically means that when planted together, certain plants can benefit from one another. However, the reverse is true as well. Certain plants may actually harm or hinder the growth of other plants. Therefore, companion planting is all about maximizing those beneficial relationships in your garden, while reducing the negative relationships as much as possible.

*Reasons to Companion Plant*

- 1) Repel unwanted bugs or pests OR attract “good” bugs like pollinators.
- 2) Enhance the growth, productivity, or flavour of a plant
- 3) Maximize space, such as growing tall, sun-loving plants with lower, shade-loving plants.

*Avoiding Chemical Use*

Typically, conventional farmers and gardeners use chemicals such as pesticides, herbicides and fungicides to repel or kill insects, and to prevent diseases that may attack or eat their crops. These chemicals are of great concern, as they contaminate the environment and can have negative health effects. Organic agriculture and gardening avoids the use of chemicals in favour of natural alternatives.

One natural alternative is to use companion planting to combat insects and disease, instead of harmful chemicals. Companion planting has been used traditionally for hundreds of years, long before the use of chemicals. Much of this knowledge has been lost as we become more and more reliant on chemicals and larger-scale industrial agriculture.

**Symbiotic Relationships**

When two living organisms, such as plants, live side-by-side, it's called “symbiosis”. There are 3 types of symbiotic relationships:

- 1- Mutualism - both benefit
- 2- Commensalism - one benefits at no expense to the other
- 3- Parasitism - one benefits at the expense of the other.

Companion planting tries to maximize mutual and commensal relationships in the garden.



3 sisters explanation



### *Companion Planting and Beneficial Habitats*

The combination of certain plants can provide a good environment for beneficial insects. This can help to keep the population of pests in check. Common beneficial insects are lady-bugs; lacewings; certain wasps, which all attack harmful insects.

### *Flowers as Natural Pesticides*

As mentioned above certain plants repel pests and insects because of their strong odours, or because they exude a chemical that is unpleasant or deadly. While some vegetables and aromatic herbs can accomplish this, they are often flowers. Three of the most common are: 1) Marigold; 2) Calendula; 3) Chrysanthemum.

### *Companion Plants and Pollination*

Other plants are beneficial because they attract pollinators like birds, bees and butterflies to gardens. Some native examples of these are: Wild Bergamot; Purple Coneflower; and Black Eyed Susans.

### *Companion Planting and Spatial Interaction*

Certain plants grown together may more effectively use limited space, and better take advantage of the growing conditions around them. For example, tall-growing, sun-loving plants may share space with lower-growing, shade-tolerant species, resulting in higher total yields from the land. This is called spatial interaction. It can also have pest control benefits, for example, the presence of the prickly vines is said to discourage raccoons from ravaging sweet corn. One of the most common examples is the Three Sisters technique.

### *Plants that enhance others growth*

Some plants just seem to grow well together, and the reasons aren't always understood. Some plants can actually enhance the flavours of others. A great example of this is basil and tomatoes. Refer to the companion planting chart in the appendix for more information.



# SUCCESSION PLANTING

## Facilitator's Guide

*Objective:* To teach workshop participants an advanced garden planning technique. Participants will learn how to plant and harvest multiple different crops per season.

### Activity #1

**Four week rotation** – In an empty patch of garden, set aside enough area to plant four rows of lettuce (leaving roughly 6-8 inches in between rows). You can also do this exercise in a garden container. First measure the distance between rows and mark on both sides using labels or row markers. Then, using a piece of string or twine, extend it from marker to marker, tracing a straight line in the soil beside it. Repeat this action for each of your four rows. This simply ensures a neat and tidy space, with straight rows. Once you have drawn the lines for your rows, write the plant variety and the date on the marker. Plant the first row densely with leaf lettuce seeds and cover the row. For each of the 3 subsequent weeks repeat the planting process. In perfect conditions, you should be able to harvest baby lettuce by the fifth or sixth week. Once you have harvest the first row, you can replant it, and begin to harvest the second, then third and fourth rows for each subsequent week. This is a great example of how succession planting can keep a constant supply of vegetables for the entire season.

### Activity #2

You can also have participants plan their virtual garden using the new succession skills that they have acquired. For example, on chart paper, participants can map out how and what they will plant in their gardens. A **planting calendar** and a **rate of maturation chart** will be helpful for participants to know how many times a crop can be planted throughout the growing season. Both of the materials can be found in the **Resoure Manual**. Once participants are finished, have them share their designs with the class.



#### Time Required:

1.5 - 2 hrs

#### Materials Needed:

Lettuce seeds  
Labels or garden stakes  
String or twine  
Scissors  
Garden space or container  
Markers  
Chart paper\*  
Growing calendar\*  
Rate of maturation chart\*

\*For indoor activity only





# SUCCESSION PLANTING

## Info Sheet

### What is Succession Planting?

Many people assume that you plant once at the start of the year, and harvest once at the end. This is not the case. A good garden should have several plantings throughout the growing season. These multiple plantings are called succession planting. Succession planting is the process of continuous planting so that you can enjoy an ongoing harvest from your garden, maximize space, and prevent being overwhelmed by everything maturing all at once.

The key to succession planting is learning the maturity rates of plants, understanding the growing calendar, and staggering plantings throughout the growing season.

### Maturity Rates

Each plant has a different maturity rate and therefore must be treated differently in the garden. Plants like arugula, leaf lettuce and radish have short rates of maturation, whereas plants like parsnips, brussel sprouts, and tomatoes have very long life cycles. As a result, plants with short life-cycles can be planted numerous times throughout a growing season, whereas longer living plants generally cannot. Some plants have mid-range life-cycles, allowing them to be planted 2 or more times – beets and carrots being a prime example.

### Understanding the Growing Calendar

As discussed in previous workshops, the success of your garden depends largely on planting crops within the correct time of the growing season – in the right conditions. Some cold-hardy plants (spinach, mustards, radish) can be planted as soon as the ground thaws in the spring, whereas other heat-loving crops (peppers, tomatoes, eggplant) must be started indoors and moved outside after the risk of frost has passed.



#### Good for Succession Planting

- Leaf lettuce
- Salad mix
- Radish
- Beets
- Carrots

(Short Maturation Rates)

#### Bad for Succession Planting

- Tomatoes
- Peppers
- Eggplant
- Parsnip
- Zucchini

(Long Maturation Rates)





### Staggered Plantings

Plant Week 1	Harvest Week 5
Plant Week 2	Harvest Week 6
Plant Week 3	Harvest Week 7
Plant Week 4	Harvest Week 8

\*\*\*This example is with ideal planting conditions. With poor soil, low light, or bad weather, harvesting may be delayed by a 1-3 weeks. However, the basic lesson remains, as harvesting will be staggered\*\*\*

By understanding the **growing calendar**, you can maximize your growing space, making sure that no space needs to be left bare at any point in the season. Quick growing, cold loving crops can be planted in the spring and harvested several times before they are removed and replaced by summer crops. Conversely, as crops are harvested from the garden over the summer they can be replaced by fall crops. As you remove veggies from the garden, make sure to remove root-matter from the previous plant, and amend the soil with compost or soil to prepare for the next planting.

### *Staggering Your Plantings*

The method described above is one way of staggering plantings between hot and cold loving plants, but staggering can and should take place even within the various parts of the growing season. Just because radish, for example, can be planted as soon as the soil thaws, does not mean that all of the radish you'll plant for the year should be planted at once. Staggering refers to repeated planting times, to ensure that harvesting can occur on a continuous basis as opposed to all at once.

For example, radishes take 21-30 days from seed to harvest. By planting 1 row a week, by the fourth week, the first row should be ready to harvest (given you have healthy soil, enough light etc.). This process can be repeated well into late spring, early summer, and again in the fall with radish.

### *Trying it out in Your Garden*

Succession planting is an advanced garden planning technique, and it is not expected that a beginner gardener will master it right away. The best way to get started is to keep it simple. Start with a single, easy to grow crop and experiment with it. Then, as space emerges in your garden, plan what you can fill it with, using the tools available to you in the resource manual. Before you know it, you will be using succession planting techniques regularly in your garden.





# PLANT AND GARDEN CARE

## Facilitator's Guide

*Objective:* To teach participants how to identify weeds, remove unwanted plants between rows, thin crops, prune plants, and fill empty space in their gardens.

### Activity #1

Garden walk around – have participants walk around the garden. Pick a participant bed and demonstrate the value of marked rows versus broadcast planting. Move to demonstration bed and focus on row planting and markers. Identify rows and focus on weeding between. Anything not in a row is a weed, EVEN if it looks like something planted. Remove weeds and unwanted veggies with participants. Then approach problematic beds and thin crops. Pick every thirds seedling, leaving larger plants in place.

### Activity #2

Thoughts???? Sorry it's not finished Laura P.



#### Time Required:

#### Materials Needed:

Garden gloves  
Trowels  
Hand tools



## 2

## PLANT AND GARDEN CARE

*Info Sheet*

Once the soil has been prepared, and the planting completed, there comes the long wait to harvest. But there is much to do in between. In order to maximize your harvest, you have to take special care to look after your plants and to maintain the general area in your garden space. Below we will talk about some easy ways to nurture your garden in this way.

*Why We Plant in Rows and Label*

In the garden planning session we talked about planting in rows and labelling those rows with the name of the plant varietal as well as the date it was planted. Rows help to organize your garden in a way that is decipherable later, and dates help to give you an idea of when things might be ready to harvest. More importantly though, clearly marked rows help us distinguish what is a 'weed' and what is the vegetable that we planted. If its not growing in the row you planted, then you can be pretty sure that it is undesirable and you remove it from your garden. As a practice, regularly remove plants from your garden that are not growing in the rows you planted. Even if they are a familiar vegetable (or a weed), by removing them, you allow more space for the plants you want to grow.

*Weeding and General Garden Maintenance*

Weeding simply means pulling out the plants from your garden that you don't want growing. Sometimes these might be viable vegetable plants, but since you have taken care to plan your garden, you only want the crops growing that you chose. Be ruthless! Remove anything you didn't plant. Most weeds can be picked by hand, but some with deeper roots require trowels or other hand tools to remove. Snipping the tops is not enough, you must remove both the plant and its root system. If you have planted in rows, sometimes you can use hand tools to help you weed. Between the rows, you can use a cultivator, or mini-rake to scrape up the weeds so you don't have to pick one by one.

**Natural Fertilizers**

There is no need to use chemical fertilizers in your garden. Nature provides everything you need with animal manures and/or compost. Cow and sheet manures can be purchased from your local garden centre, but if you have access to a farm that has composted manure available that's even better.

You can also make your own compost using the instructions provided in the **Composting Info Sheet** provided in this curriculum. In the Spring and the Fall, and when replanting with something new, always make sure to fertilize the soil to rebuild nutrient levels, using one of the natural fertilizers discussed above.



### The Rule of Three Quarters

Care must also be taken when harvesting your plants. From leafy plants, from which you are harvesting foilage, such as kale or swiss chard, make sure not to over harvest. Never harvest more than 3/4 of the leaves available. Leave at least 1/4 to replenish the plant. Harvest the largest leaves first, and leave time for smaller leaves to mature. Over harvesting can damage the plant and cause it stop producing leaves or even die.

### Thinning

Once seeds start to germinate, and emerge from the ground, you may notice that they are over crowded. Crowding means that there are far too many plants growing, which will prevent plants from reaching maturity. To solve this problem, simply pluck out every 2nd or 3rd seedling to make space for the plants to grow. Try to be as gentle as possible, but some level of disturbance is unavoidable. Once you have thinned your rows, you will notice that plants grow much more quickly, because they have more nutrients to draw upon from the soil. Don't feel bad about killing plants, rather think about it like you are making room for others to flourish. After you have thinned once, continue to monitor whether you have enough space for that plant to grow and continue thinning as necessary.

### Pruning Tomatoes

Some plants require pruning. Most commonly in the garden it is tomatoes. Tomato plants will grow all over if you let them, but you will get more fruit if you prune them. The best way to do this is to remove '**suckers**' which grow in the 'elbow' of the plants, between the stem and the branches. These shoots want to grow new plants, but allowing them to do that would put energy into the stalk and not the fruit. Simply pinch these 'suckers' with your fingers if they are small, or remove them with scissors if they are large. It's best to do this early. Once plants get too big, it's too late.

### Rotating Crops

If you have planted fast growing crops in one area of your garden, make sure to plan for a replacement crop in that area for later in the season. For example, if you planted radish in one end of your garden in late April or early May, you might want to put tomatoes there after. Always remember to refertilize. It's always best to think about how to use all of the space in your garden throughout the growing season. For ideas refer back to the **Growing Calendar** and the **Succession Planting Info Sheet**.





# HARVESTING FROM THE GARDEN

## Facilitator's Guide

*Objective:* To teach participants how to monitor the growth of their gardens, and build knowledge around when it is time to harvest to prevent waste and to ensure gardeners are getting the most from their plots.

### Activity #1

**Garden Walk Around** - The best way to teach people how and when to harvest vegetables is to dive right into the garden and start looking at plants. In advance you may want to choose a few vegetables to focus on that you suspect will be close or ready to harvest in the garden. As an example you can purchase these vegetables from the farmers market or grocery store in advance to use as an illustration for participants. Also, make sure participants have a copy of the harvesting guide to assist them as they tour through the garden. The guide can be found in the Resource Manual. Identify your chosen vegetables in the garden, and based on the harvesting guide, and what you already know, determine whether they're ready to harvest. Take note of plants that are close to their harvest date, or past their harvest date as examples.

### Activity #2

**In-Class Harvest Quiz** - If you don't have a garden to tour, there are some options for activities in the class room. Having examples of mature vegetables on-hand can be helpful aides, and can also be helpful to remind participants what they already know. If you have access to a garden outside of the workshop, you might bring in mature and immature vegetables (or photos) for discussion. Alternatively, you can use the Harvesting Guide as the basis for a True or False, Multiple Choice activity. For example: Tomatoes are ready to harvest when they are: a) green, hard and have no smell; b) soft, reddish, and smell slightly sweet; c) mushy, deep red and smell sour. Similar multiple choice questions can be made up for any or all of the items that appear on the Harvesting Guide hand-out.



**Time Required:**  
45 mins to 1 hr

**Materials Needed:**  
Scissors/harvest knife  
Garden gloves  
Bag for veggies  
Harvesting guide  
Mature vegetables

**Supplementary Materials:**  
See Vegetable Harvesting  
Guide Appendix



# 2

## HARVESTING FROM THE GARDEN

### *Info Sheet*

#### *Number of Days to Maturity*

Each vegetable variety has a set number of days to maturity – that is the number of days from when the seed is planted to when the fruit or vegetable can be eaten. This number depends widely on the vegetable variety. Some vegetables like radish are ready to harvest within 30 days, whereas others like parsnips can take over 120 days. The number of days to maturity can usually be found on the back of the seed packet your seeds came in, or in the seed catalogue that you ordered from. If not, many tables and graphs can be found online to help you on your way. Days to maturity can be affected by hours of sun per day, soil health, irrigation and other environmental factors.

#### *Keeping Track of Your Vegetables' Maturity*

Knowing when to harvest requires a lot of preplanning, to make sure that you can track the growth of your plants and to ensure that not everything is ready to harvest at the same time, which risks spoilage. As mentioned in the Garden Planning Workshop, a good habit to get into is to always clearly mark your rows with the name of the vegetable and the date it was planted. This allows you to monitor the number of days it has been growing, and pay closer attention to the plant as it nears the harvest date. Some gardeners might choose to also create garden maps, which records the same information, but I find it easier to have it directly available in your garden bed(s).



#### **Quick To Harvest Veggies**

- Baby Lettuce
- Salad Mix
- Arugula
- Mustards
- Asian Greens
- Radish
- Bok Choi
- Pak Choi
- Tat Soi



**Handling**

It is very important to properly handle your vegetables after they have been harvested. As soon as possible, rinse vegetables with cold water to revive them. Never leave vegetables in direct sunlight. With light leafy vegetables like lettuce and spinach, immerse them in a cold water bath as soon as you get home. This serves the dual purpose of rinsing dirt and any bugs off the leaves, as well as re-hydrating the cuttings. By rehydrating the cuttings you will ensure that their shelf life is increased significantly. If handled correctly, fresh vegetables can last for weeks in your fridge, and months in a cold storage or root cellar.

*Use the Knowledge you Already Have*

Once you know that your vegetable is close to maturity, because you have been tracking the days it has been growing, you can use the knowledge you already have to determine whether the plant is ready to harvest. This won't work for everything, especially plants that you're unfamiliar with, but many of the common vegetables we eat often are vegetables you can grow in your garden. So ask yourself: "does it look similar or close to what this vegetable looks like in the grocery store or farmers market?" If so, then you're likely ready to harvest. If not, you likely need a bit more time to get up to size and/or ripeness.

*Test It Out*

Another easy way to tell whether something is ready to eat is to simply try it out! The best way to do this is to just try a small amount, before you harvest your entire crop. If it's a little small, or doesn't taste quite right, give it a few more days and try again. Once you've discerned that it's ready, and then you can harvest enough for a meal or two. Another important rule is not to overharvest. With many plants, such as kale and chard, it's best to only harvest a portion of the largest leaves and allow the smaller ones to grow back. Overharvesting can reduce production.

*Have You Waited Too Long?*

Be careful not to wait too long. It's better to harvest early than to let food spoil in your plot. Pay special attention to your plants' maturity time, and test them regularly to make sure. If you notice that your plant is producing flowers, you've waited too long. At this point, the plant has quit putting energy into the fruit, and is now directing that energy to seed production. If you notice some plants going to seed, it's a good indication to harvest those same plants that haven't started yet.





# COMPOSTING

## Facilitator's Guide

*Objective:* Gardeners learn the basics of backyard composting; how to distinguish between green and brown compost materials and how to manage a compost system.

### Activity #1

In garden activity: After reviewing the information sheet in the classroom or garden, bring participants to the composting system for hands on experience. In advance prepare sufficient amounts of green and brown compost materials for demonstration. Involve participants in all steps of composting trimming and chopping, layering, turning compost. Compare active compost to finished compost to show participants what the final product should look and smell like. Refer to the information sheet throughout the workshop and make time for questions at the end.

### Activity #2

In-class activity: After reviewing the information sheet with the participants, lay out examples of green and brown compost materials for them to interact with. As a class, have them identify which are green and which are brown. Once participants have properly identified the green and brown materials, mimic the processes of composting in a 2L pop bottle or another transparent container. Go through all of the steps you would in a full-size compost including cutting, chopping, shredding, layering, turning, covering and leaving to cook. Refer to the information sheet throughout, and make room for questions at the end.



.....

#### Time Required:

1 to 1.5 hrs

#### Materials Needed:

Kitchen scraps  
Garden Waste  
Shredded newspaper  
Scissors or sheers  
Bag of soil  
Finished compost  
Compost system  
Empty 2L pop bottle

#### Supplementary Materials:

See Composting Do's and Don't in Appendix ?

.....





# COMPOSTING

## Info Sheet

### *What you need to Compost*

Composting can be done in a variety of methods using many different containers or systems. It can be as simple as a pile on the ground – but for composting in the city, it is generally recommended that you use a covered container to keep out pests. Pre-fabricated plastic composters can be purchased from hardware stores and garden centres, and can occasionally be purchased from your municipal government. See: <http://www.halifax.ca/recycle/greencart.php> More durable compost systems can be built out of lumber or other materials, but tend to be more expensive.

In order to effectively compost, any back-yard or community garden should have a minimum of two to three composters, or 2-3 chambers within a single compost unit. The reasoning behind this, is that as one compost becomes full, it needs to be left to 'cook' while you begin to fill your second and third composters or corrals. Ideally, by the time you have filled your third compost container; your first is almost ready to be used. In order to create high-quality compost, compost units have to be managed carefully.

### *Green and Brown Compost Materials*

A good compost must have an equal balance of what are called Green Compost and Brown Compost. Green compost tends to 'burn hot' because it is high in nitrogen, whereas Brown compost tends to 'cool' or neutralize because it is high in carbon. Too much Green compost will create a nasty, stinky compost, likely to attract pests. Too much Brown compost will produce an environment that is too dry and not 'hot' enough to break organic materials down.



### **Why compost?**

Compost refers to the natural process of that occurs as organic materials breakdown into soil. Backyard or garden composting can be an important way to reduce waste, save money and build valuable nutrients for your garden. Small composting systems utilize waste products that people usually ship off their property, such as kitchen scraps, garden and lawn debris, and leaf litter, to making a rich fertilizer that can later be used in your garden.



### Materials Needed:

Cardboard/newspaper

Garden waste

Chopped Leaves

Grass clippings

Compost/Manure

Top-soil

Many other items work too

### *Balance*

The key to good composting is finding a healthy balance between green and brown compost materials. You can make composting as complicated as you like, but the best and simplest advice is to add equal parts green and brown materials (1 to 1) to your compost pile. Simply add a layer of green materials and then cover with brown materials. If you find the pile is too dry, add some water. Also, make sure to turn your compost periodically, to aerate it, this helps materials to break down more quickly. Once you have filled one compost, cover it and allow it to cook down until it has become light fluffy soil with an earthy (as opposed to nasty) smell. It's best to turn the compost throughout this process. Depending on the pile, it can take anywhere from 3 to 8 months for compost to be ready.

### *Common Mistakes*

Mismanagement of compost systems is common, and often leads gardeners to give up on composting, in favor of shipping waste off site and purchasing expensive compost from garden centres. The most common mistake is adding too much green or too much brown compost. Too much green will make for a stinky, messy compost. Also, adding things like meat, fish and cooked foods, will also create bad odors and unhealthy bacteria in the soil. Another very common mistake is overfilling your compost with materials that are too dry or large to breakdown. During fall yard cleaning, people often jam their composters full of leaves and large branches and wonder why they haven't broken down by spring. Remember, there must be a proper balance of green and brown for composting to work correctly. Also, and very importantly, any large materials, whether it be tomato stems or tree branches, must be broken down and/or chopped up before adding it to the compost so that it can break down more easily. For items too big to chop up, add them to your brown yard waste bags, and have the municipality dispose of them.





# EXTENDING THE GROWING SEASON

## Facilitator's Guide

*Objective:* To help gardeners learn how to start vegetables earlier and grow them later to extend their growing season.

### Activity #1

Hand out planting calendars. Appendix A and B are examples of growing calendars. Draw a theoretical garden. Have participants pick out vegetables they'd like to see grown, and then have them learn their growing times by referring to the calendars. This will help to identify the cold-hardy vegetables, which are ideal for the extended season (Fall and Winter months). Then, make a "cold frame plan" with selected vegetables. If you have a cold frame available, plant it with either seeds or transplants.

### Activity #2

Do a building demonstration of a cold frame. Full instructions on how to build a cold frame can be found in the Appendix. If time is limited, try measuring and cutting your boards before the workshop. Apart from cold-frames there are many other season extension materials that you can demonstrate to participants such as row-cover, wind tunnels, cloches and many many more. Bring a variety of them with you and let gardeners experiment with what could work in their garden.



#### **Time Required:**

1.5 hrs (longer for cold frame construction).

#### **Materials Needed:**

- Pencils
- Growing calendar
- Blank paper
- Tools for building (see appendix )





# EXTENDING THE GROWING SEASON

## Info Sheet

*Season Extension* means extending the traditional gardening season; prolonging the time crops can grow outdoors, and giving plants a head start before the outdoor growing season. Using tools like, cold frames, row covers and grow lights, we can actually grow food year round. The secret to stretching your growing season is matching the right vegetables with the appropriate time of the year when they grow best. For example, heat lovers like tomatoes thrive in the summer, but would be a sorry sight in the winter. On the other hand, cool lovers like kale and lettuces can survive in cold frames all winter long.

### *Spring: "starting early"*

In Spring and fall the air and soil is cooler, and plant growth is slower. Some cool season plants can be directly seeded outdoors. Others do better with a head start, and seedlings are grown indoors.

If you're starting seeds indoors, make sure your plants have access to enough light, to prevent your plants from getting leggy. Artificial "grow lights" can be used to ensure that your plants are getting 12hrs of direct light a day. Using grow-light methods can be as simple as using a fluorescent light bulb, or as elaborate as grow-light plant stands.

Experienced gardeners will prep their garden (add compost and other amendments) the previous fall so that come spring, and the soil thaws, the first sowing of cool-loving crops is easy. Plant growth in early spring can be sped up by using **cold frames** (essentially mini greenhouses) and **row covers** (permeable material used to shield plants from cold and wind).



### What is the "growing season"?

The traditional growing season is usually considered to be length of time between the last spring frost and the first fall frost. Frost can be deadly for warm season plants, and as a result these crops need to be planted, grown and harvested during frost-free period.

#### TIP:

Plant growths slows as day length shortens. When planning a fall or winter harvest, best to add an extra week or two to the "days of maturity" listed on the back of the seed package.



**Cool Roots. Hot Fruits.**

Crops that like cooler temperatures are typically grown for their roots, stems, and leaves. Think lettuce, kale, broccoli, radish, and beets. Crops that love the heat typically provide us with their fruits like tomatoes, cucumbers, peppers, and beans. The exception? Peas! They have edible fruit parts but thrive in cooler temperatures!

*Fall: "growing beyond"*

Keys to keeping the growing going into the fall include: **heat-retention and frost-protection**. Here, are 3 ways you can continue to harvest into the late fall and winter.

*Cold hearty vegetables.* These crops can tolerate colder temperatures (even frost) and need less light. Planting some in Spring and again in August for a Fall harvest is a great way to make the most of the growing season.

*Succession Planting:* Plant continuously so that you can enjoy a nonstop, staggered harvest. Start by becoming familiar with the growing calendar, and choose season-appropriate varieties. For example, some types of spinach do better in cool temperatures while others have been bred to do better in the summer heat.

*Protected Growing:* The warmer temperatures created by season extenders like cold frames will keep plants growing for longer and will protect against damage from frost.

*Season extension tools & techniques*

*Raised bed/cold frames:* more accessible, manageable in winter, and they heat up sooner in the spring-time! It's also easy to attach a window lid, or hoop house to a raised bed, or turn a raised bed into a cold frame.

*Mulching:* mulching acts like a blanket and insulated plants over the winter. Mulching is a great habit to get into- using hay or straw, woods chips, or dried leaves works.

*Cloches or hot cap:* used as a protective covering to shield plants. Ex. a plastic pop bottle. Use cloches early on in the season when there is still risk of frost or cooler nights- for instance, protecting a newly-transplanted tomato.

*Interplanting:* Often used to extend the season of cool loving crops into the summer. For instance, cool loving arugula can be grown under taller plants, benefiting from their shade, and keeping cooler.



# 1

## MAKING A LASAGNA GARDEN

### Facilitator's Guide

*Objective:* Gardeners learn a new skill/technique for building a raised bed that doesn't require digging and can make use of many of the materials already found in their home, yard and garden for free.

#### Activity #1

If participants have access to garden space, the best way to learn this skill/technique is to build a lasagna garden. Gather the materials from the list and have them ready to go. With the participants, either in the classroom or the garden, review the steps to building a lasagna garden. Before getting started with the build, make time for any questions or opportunity for gardeners to share what they know about this or similar topics.

In the garden take care to follow each step. Allow all participants to participate as best they can. Some may be more physically able than others. Take this opportunity to get those less physically active to delegate tasks and act as site manager, offering instructions to others. Once finished, clearly explain the steps which take place in the spring, and, if possible, assign a gardener to tend to the lasagna garden in the following growing season.

#### Activity #2

If you don't have a garden you can replicate the activity above on a smaller scale using a shoe-box or preferably a large tote as your growing area. Mimic the steps that you would take in the garden, adding cardboard to the bottom, a layer of green, a layer of brown, compost/soil repeat. Use the info sheet as reference, checking in with participants to make sure it is being done correctly. Clear containers can be useful as they demonstrate the lasagna layers profile. Activity works well with children, less with adults.



#### Time Required:

1.5 to 2 hrs

#### Materials Needed:

Cardboard or newspaper  
Chopped Leaves  
String/Twine  
Stakes  
Grass clippings  
Compost/Manure  
Top-soil  
Many other items work too



# 2

## MAKING A LASANGA GARDEN

### *Info Sheet*

#### *Getting Started*

Measure out the dimensions of your raised bed. Stake the corners, and run string or garden twine tightly around the edges, securing the string to each garden stake. Your bed should be no wider than 4ft across, to allow for the average person to reach just beyond half way across. If you already have a framed-in raised bed, but need to build up the soil base, lasagna gardening is a great method to improve and increase the soil in your existing bed.

#### *Sheet Mulching*

Once you have marked the perimeter of your bed, it is time to focus on suffocating the weeds that live within it. The best way to do this is to apply a heavy layer of cardboard or newspaper to the entire surface area of your soon-to-be bed. This method is called sheet mulching and prevents air and light from getting to the grass and weeds below it. Over time the sheet mulch will break down or compost and become part of the soil below it. This is why lasagna gardening is known as a 'no-dig' method.

#### *Making the Lasagna*

A lasagna garden should be a minimum of 18-24 inches in height, and made up of multiple layers of green and brown composting materials (see Composting Info Sheet). The idea is that over time, these materials will break down into a single growing medium. You can use a wide variety of materials to build your lasagna garden including: chopped leaves, grass clippings, garden waste, compost, manure, woodchips, mulch, wood ash, straw, shredded newspaper, kitchen scraps (no cooked items, oils, or meats), and really any compostable organic materials.



#### **What is a lasagna garden?**

A lasagna garden is an easy to make raised bed that contains different layers of organic materials that will eventually break down into your growing medium over-time. The many different layers are why it is called a lasagna garden. It is a 'no dig' approach to gardening as layers of organic matter are built up above ground. Lasagna gardens are generally built in the fall when there is plenty of organic matter available to you from your yard and garden, such as leaf litter, grass-clippings and garden waste. Making one in the fall, also gives sufficient time for your multiple layers to compost into a single growing medium.



## 3

## MAKING A LASANGA GARDEN

*Info Sheet***Ready to Use**

After the winter is over, and the soil has completely thawed, remove the mulch and/or coverings off the top of your lasagna bed. Now you want to check how much the organic matter has broken down. If it worked perfectly, your soil will be light and fluffy and free of debris. More likely, you will have a mix of light composted soil, some chunks of leaves and straw. Remove the largest of the debris. Once your bed is raked, and the bigger chunks have been removed it's time to plant your garden bed!

*Layering*

Once you have all of your ingredients in place, it's time to assemble your garden entrée. There are many technical explanations of how to layer a lasagna garden, and dozens of different explanations why. For our intents and purposes, all we want to ensure, is that by the time spring comes around, all the separate materials we have added, will work together to biodegrade over the winter, to ensure that our bed isn't clumpy or matted, but is a nice light, fluffy and rich soil base.

To ensure that this happens, start by layering organic material that rots or biodegrades quickly (green compost), like chopped leaves, grass clippings, or kitchen scraps. Cover this layer with a layer of material that breaks down more slowly (brown compost), such as straw, mulch, wood-chips or shredded newspaper. These materials absorb moisture, reduce odour, and neutralize acidity. On top of this add a layer of compost and/or manure, followed by a layer of top-soil. Each layer should be about 2" thick, but can be less or more, depending on the materials you have available.

*Leaving your Lasanga to Cook for the Winter*

Once you have stacked the layers to your preferred height, you will want to cap the bed, and low it to cook down, or compost for the winter. The easiest way to do this is to cover the bed thoroughly with fallen leaves from your yard. You want to prevent your layers from coming into direct contact with winter weather, and have a layer of insulation on top, to allow the temperature to remain high enough inside for bio-digestion to continue taking place. You could also choose to put a layer of fabric or plastic on top of the bed, and then cover that in leaves, mulch, or weigh it down. This is a fairly easy, inexpensive, and efficient way to ensure that your lasagna garden remains intact over the winter.



# 1

## PUTTING YOUR GARDEN TO BED

### Facilitator's Guide

*Objective:* To teach participants the proper way to close down their gardens at years end. This approach will help gardeners reduce weed growth in the spring, improve the health of the soil for next season, keep the garden neat, tidy and manageable.

#### Activity #1

**Sheet Mulching** - The best way to teach gardeners how to put their garden to bed is to have them do it themselves. Hands on experience in this area is invaluable. To demonstrate, the facilitator may want to use a public bed to demonstrate, and then gardeners can follow suit as the growing season comes to an end. Follow the instructions laid out in the information sheet. At each step, take a moment to discuss what you are doing and why. Refer to the information sheet as necessary. Repeat instructions with each bed.

#### Activity #2

**Cover Cropping** - Sheet mulching is just one way to put a garden to bed. There are many other techniques that gardeners can explore. One common technique is cover cropping. Cover cropping means planting a seed variety that will over winter and out compete other weeds that might grow there. Cover crops like clover or winter rye, also have the benefit of fix nitrogen and increasing the nutrient content of the soil in your garden bed. To cover crop, simply broadcast seeds across the surface of the bed, so that they cover the entire surface area of the garden. These hearty will stay in the soil over the winter. In the spring, they are intended to be worked back into the soil, at which point that add nutrients to the soil as they break down. For urban gardens, choose lighter, less fibrous plants, that will break down more easily in the spring.



**Time Required:**  
30 minutes per bed

**Materials Needed:**  
Shovels  
Rakes  
Wheelbarrow  
Buckets  
Compost  
Straw or wood-chips  
Cardboard or landscape fabric



## 2

# PUTTING YOUR GARDEN TO BED

## *Info Sheet*

### *The Reason Why*

It is very important to continue to maintain your garden right until the end of the growing season. Leaving your bed unattended can cause many problems in the following growing season. As plants mature in the late summer and fall, they start producing seeds, if not removed from the garden, they will scatter, and cause dozens of plants to sprout in the following growing season. Additionally, if your bed is left unattended, it becomes vulnerable to any number of weeds taking over the plot, making it more difficult for you to grow food the next year. So for this reason, it is as important to your garden to bed properly, as it is to prepare it in the spring.

### *Cleaning Out Your Bed*

As the growing season comes to a close, start removing plants from your garden as they die or stop producing. The danger in leaving plants in your garden in the fall and over the winter is that they will go to seed and litter your garden with seeds that will then produce plants everywhere the next growing season. If you want to save seed, select a few plants to remain in your garden and discard the others. Remove all annuals, plants that are planted each year, and leave any perennials that you would like to come back the following year. Also, take care to remove any weeds or unwanted plants that have set root over the growing season. Gather all garden waste and add it to the compost, according to the instructions provided in the **Introduction to Composting** info-sheet.



### **Cover Crops**

Here we recommend sheet mulching as the best way to ensure a weed free bed in the next growing season, but another option is cover cropping. Follow the same steps indicated here by cleaning out your annual plants, adding fertilizer and working it into the soil. But instead of laying down a sheet mulch, think about planting varieties that can over winter and protect your soil that way.

Common cover crops are clover and winter rye. To cover crop, simply broadcast these varieties generously across the surface area of your garden bed. These plants will out compete weeds, and have the added benefit of fixing nutrients into your soil. In the spring, work the cover crops into the soil where they will break down.



**Perennials and Garlic**

While it is important to put your garden to bed to make sure your bed is weed free the next year, it is important not to suffocate your perennials that will come back the next year. Remove all of your annuals and sheet mulch over top of them, but leave your perennials uncovered so that you don't risk losing them.

Also, if you would like to plant garlic to harvest for the next growing season, plant bulbs in the fall, and mulch with straw around them (as opposed to landscape fabric or cardboard) so that they can sprout freely in the spring.

*Preparing Your Soil*

Once all of the plant matter that you want removed from your bed is taken out, turn the soil gently with a shovel or pitch fork. By doing this, any remaining weeds can be removed easily. Once all weeds have been removed, add a nutrient rich soil, compost, or manure. This is called top-dressing – adding additional nutrients to the plot at the end or the beginning of the growing season to increase soil health and fertility. Add a thin layer 1-2 inches to each bed, make sure to mix the nutrients well into the soil.

*Mulching*

The main purpose of mulching your plot in the fall is to suppress weeds and ensure a clean and tidy growing area when you untuck your bed in the spring. Any substance that can suppress weed growth can be used as mulch. Most common are straw, leaves, and/or wood chips. This is the quicker, easier way to mulch. For the most effective weed suppression, you can try **sheet mulching**. Sheet mulching involves laying down a layer of landscaping fabric, cardboard, or plastic over the entire surface of your bed, and then covering it with materials to weigh it down. This provides a superior defense against weeds. I often use landscaping fabric which can be purchased from any garden centre, with a layer of wood-chips to weigh it down on top. The fabric keeps the woodchips from mixing with the soil, and when removed in the spring, the wood chips can conveniently be dumped in the paths to use as mulch there. Whichever way you mulch, you will notice a big difference in the tidiness of your bed in the next growing season.





