

GROWING WITH YOUR FOOD: PLANTING AN EDIBLE GARDEN

PLANNING YOUR GARDEN

The first step in planting any garden is making a plan. Planning your garden in advance can save you money and maximize the number of plants that will fit in your available space. Here is a list of considerations to take into account when planning your garden:

1. **Space:** Don't let the size of your space keep you from gardening; simply plan so that you can do as much as you can with what you have available. Container gardens are an option if you are living at a rental property that does not allow you to dig into the ground. If you do not have the space, check into whether or not your community has a community garden plot for rent.
2. **Cost:** Consider the costs of seeds versus transplants, as well as other materials needed to start and maintain your garden.
3. **Soil:** The soil you have determines what you can grow, how much watering is required, and how many nutrients are available to the plants.
4. **Organic vs. non-organic methods:** Choose what is best for you, but consider the impacts to the land and your food that result from each method.
5. **Sunlight:** Choose plants that grow best in the lighting that you have available.

Once you have taken these factors into consideration, make a plan for what you would like to plant. Read the seed packets or use the spacing guide in this packet to determine how much space each plant is going to need. Create a map to scale of your future garden to determine how many of each plants you would like to grow will fit in your space.

Another part of the planning process is keeping track of when all of your plants should be planted. Planting too early can leave plants susceptible to frost, while planting too late may mean that your plants will not be ready before the next frost. Some seeds need to be started indoors months in advance of the last spring frost. You can also purchase plant starts from your local greenhouse rather than starting your own seeds. Use the plant starting guide in this packet to determine when you should start plants in the garden relative to the last spring frost.

Choose a variety of plants that will allow you to enjoy the benefits of your garden in all seasons. Plant salad greens for a late spring treat, cucumbers for an early summer snack, tomatoes for a late summer salsa, and squash that will be ready in the fall and preserve long into the winter. Root crops, like turnips and rutabaga, also store well in the winter time.

TO TILL, OR NOT TO TILL

Many gardeners till their land in the spring time to loosen the soil for roots to be able to spread more easily, and also to get rid of pesky weeds. Be sure to wait until the soil is warm and dry to protect the soil, and in effect, your plants. Tilling by hand with a hoe can be a challenge, but if a rototiller is not in your budget consider renting from your local hardware store or borrowing one from a neighbor.

No-till practices are becoming more popular as we learn more about the impacts of tilling on the soil. Work in the garden may be more challenging when first getting your no-till garden ready, but becomes easier with time. To learn more about no-till gardening, visit <http://www.smilinggardener.com/lessons/garden-tilling-soil>.

OH THE WEEDS, WEEDS, WEEDS!

A weed is simply a plant that is in a space where we do not want it to be. Garden weeds compete with our food plants for water and nutrients. There is no easy solution to ridding the garden of weeds. Herbicidal chemicals can be harmful to us, as well as to beneficial plants and animals. Pulling weeds by hand, as well as companion planting with plants that outcompete many weeds are organic methods that you can use to reduce the amount of weeds in your garden.

PLANTING

It's time for all of your dreams you made during the planning process to come true! When planting your garden, it is important to be sure that seeds and plants are put in the ground at appropriate depths. This will help to be sure that your plants are able to make their way to the surface of the soil. Spacing is also key to being sure that your plants are strong and healthy. Planting without enough space between plants will cause the plants to compete for water and nutrients, stunting their growth. Read the seed packets to determine how seeds should be planted as some have specific instructions, such as scattering across the surface of the soil or planting several seeds in one hole.

WATERING

If your garden is telling you that it needs to be watered, it may be too late. Rain can be sparse during some summer months, so you will likely have to water your garden yourself. During particularly dry times, it is important to water your garden as often as you are able, say once a day. To allow plants time for absorption, water during the coolest parts of the day (morning and evening) to prevent evaporation. Your plants will tell you that they are too dry by wilting. Keep an eye on your plants and feel the soil for moisture to determine if your garden is too dry. Watering by hand can be a calming and soothing activity, while sprinklers are convenient for saving time and energy.

FEEDING YOUR GARDEN SO THAT IT CAN FEED YOU

Not all soils are created equal when it comes to having enough nutrients. Sandy soils drain water quickly, and that water easily takes nutrients in the soil with it. If your plants are lacking certain nutrients, they will certainly tell you. If lower leaves turn yellow, this is likely a sign that your plants are lacking nitrogen. Using chemical fertilizers may help your plants in the short term, but these easily wash through the soil and can end up in the groundwater. Compost is an excellent organic medium to use to add nutrients to the soil, while also improving the quality of your soil. At-home composting is easy, but you can also purchase compost from your local greenhouse.

HARVESTING THE FRUITS OF YOUR LABOR

After all of your hard work, it is finally time for it all to pay off. Knowing that you grew it yourself allows you to take ownership of your food and is a huge leap towards self-sufficiency. Your fresh garden treats are often much more nutritious than their grocery store counterparts. Grocery store produce is often shipped over long distances, causing foods to be picked unripe so that they are able to survive the journey, and then ripen off of the plant. Waiting to harvest until a plant is ripe allows time for the food to absorb as many nutrients from the soil as possible. Growing your own garden also gives you a smaller carbon footprint, as massive quantities of fossil fuels are used to ship produce across the country. The fruits of your own labor are truly much sweeter.

For the first few years your garden may seem like somewhat of a science experiment, but do not give up! Learn as you go and do not be afraid to make mistakes. Not only will your garden grow, but you will as well.

Happy gardening!



Central Rivers Farmshed is a 501c3 nonprofit organization representing all aspects of the food system whose members are committed to making Central Wisconsin a renowned, local food community. Farmshed's mission is to expand the connection between local residents and their food by providing opportunities for participation, education, cooperation, and action to support a local food economy in Central Wisconsin. For more information, visit farmshed.org.

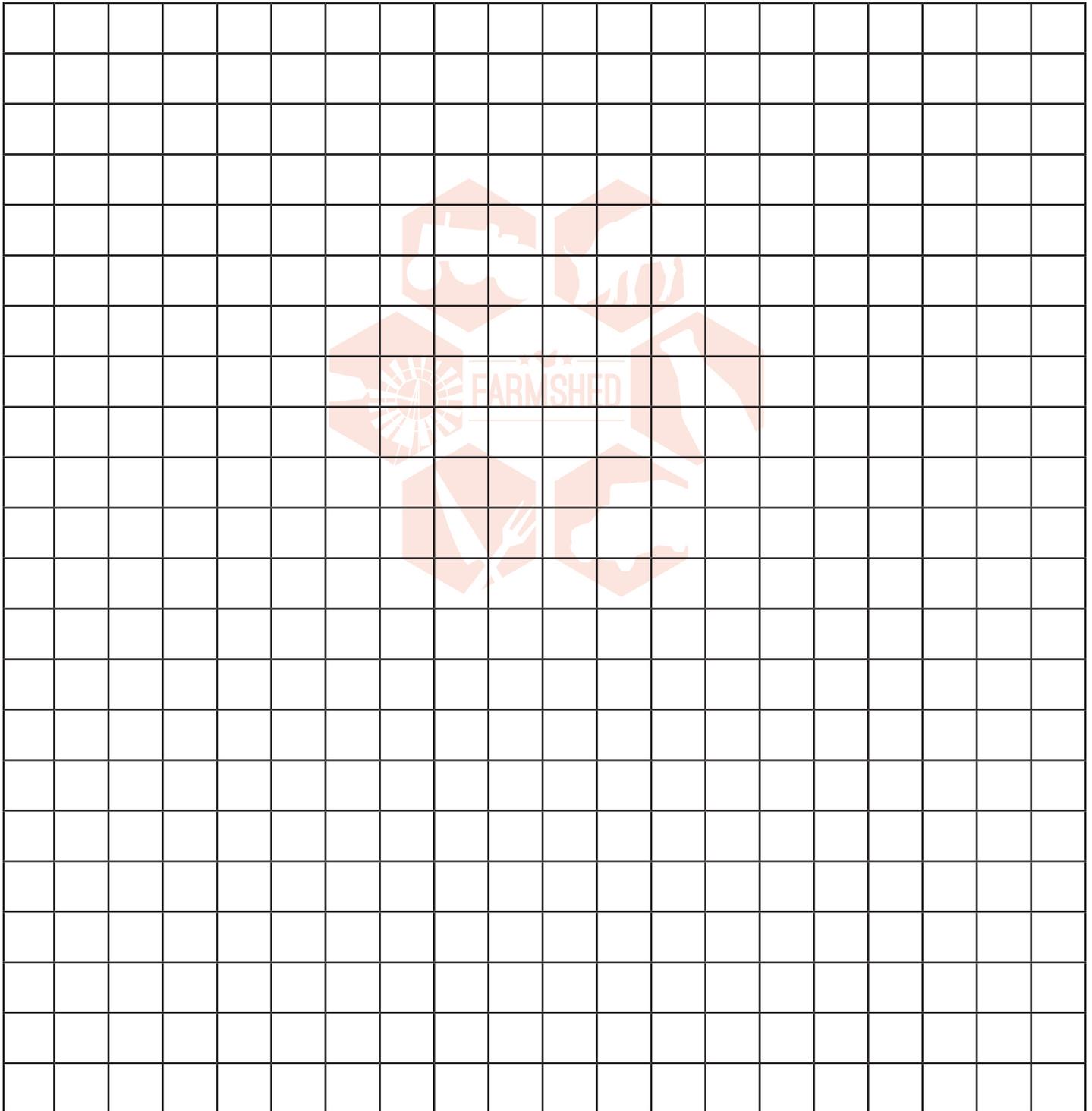
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CREATING A MAP

Planning your garden in advance can save you money and maximize the number of plants that will fit in your space. By using a grid similar to this one to map out your garden, you can be sure that you will not buy more plants and/or seeds than you need.

Take these tips into consideration when planning your garden:

- Read the seed packets or follow guidelines from the spacing guide in this packet to determine how far apart seeds and plants will need to be planted.
- Think of the height of the fully grown plants when making your plan as well; large plants can shade out smaller plants that may need full sunlight, or create shadows for those that need shade.
- Plant companion plants that grow well together to save space and maximize your harvest.



Scale: 1 square = _____ feet

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STARTING YOUR PLANTS

Knowing when to start your plants will lead to a successful growing season! Some plants take longer to grow to maturity than our short Wisconsin growing season, so those plants need to be started indoors early. Plants that grow more quickly can be directly planted into the ground as seeds. This guide will help you make a plan for when and where to start your seeds, as well as when to move plant-starts to the garden.

STARTING SEEDS INDOORS

Average last spring frost in Stevens Point: May 10

	Plant	When to plant outdoors relative to last spring frost	Outdoor planting date	Weeks to reach transplant size	Indoor sowing date
Heavy frost survivors (26°-30° F)	Broccoli	2 weeks before	April 26	4-6 weeks	March 15-29
	Brussels sprouts	2 weeks before	April 26	4-6 weeks	March 15-29
	Cabbage	4 weeks before	April 12	4-6 weeks	March 1-15
	Collards	4 weeks before	April 12	4-6 weeks	March 1-15
	Kale	4 weeks before	April 12	4-6 weeks	March 1-15
	Kohlrabi*	4 weeks before	April 12	4-6 weeks	March 1-15
	Peas*	6-8 weeks before	March 15-29	3-4 weeks	February 22-March 15
	Spinach*	3-6 weeks before	March 29-April 19	4-6 weeks	March 15-22
	Swiss Chard*	2 weeks before	April 26	4-6 weeks	March 15-29
	Turnips	4 weeks before	April 12	3-4 weeks	March 15-22
Light frost survivors (30°-32° F)	Cucumbers*	1-2 weeks after	May 17-24	3-4 weeks	April 10-May 4
	Eggplant	2-3 weeks after	May 24-31	8-10 weeks	March 22-April 5
	Marigolds	1-2 weeks after	May 17-24	6-8 weeks	March 29-April 12
	Melons*	2 weeks after	May 24	3-4 weeks	April 26-May 3
	Okra*	2-4 weeks after	May 24-June 7	4-6 weeks	April 26-May 10
	Peppers	2 weeks after	May 24	6-14 weeks	February 1-April 12
	Squash*	2 weeks after	May 24	3-4 weeks	April 26-May 3
	Tomatoes	1-2 weeks after	May 17-24	6-8 weeks	March 29-April 12

*Can also be direct seeded outdoors

STARTING SEEDS OUTDOORS

Plant	When to plant outdoors relative to last spring frost	Outdoor sowing date
Arugula	2 weeks before	April 26
Beans	2 weeks after	May 24
Beets	0-2 weeks before	April 26-May 10
Carrots	2-3 weeks before	April 19-26
Corn	2 weeks after	May 24
Cucumbers	2 weeks after	May 24
Leaf lettuce	2 weeks before	April 26
Melons	2 weeks after	May 24
Nasturtium	1-2 weeks before	April 26-May 3
Okra	2 weeks after	May 24
Peas	4-6 weeks before	March 29-April 12
Pumpkins	1 week after	May 17
Spinach	4-6 weeks before	March 29-April 12
Squash	1 week after	May 17
Sunflowers	2-3 weeks after	May 24-31

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COMPANION PLANTING

Companion planting, a.k.a. interplanting, is the act of growing plants that complement one another together and is beneficial to your garden for many reasons. Some plants, like beans, make nutrients readily available for other plants. Creating diverse plantings can also help to confuse and reduce pests. This practice also allows you to maximize the number of plants in a small space. Use this guide to discover what plants grow well together.

Plant	Gets help from...	Gives help to...	Plant away from...
Beans	Corn reduces leafhoppers. Marigolds and garlic ward off pests.	Fixes nitrogen for and stabilizes corn plant. Marigolds and garlic repel pests.	Garlic, onions, shallots, and leeks
Beets	Thrives when planted in alternate rows with cabbage, onions, and kohlrabi.	Red leaves are beautiful in ornamental plantings.	Pole beans, field mustard
Broccoli	Thrives with beans, celery, potatoes, and onions. Chamomile, dill, peppermint, rosemary, and sage can ward off pests.		In poor soils, do not plant near plants that have large calcium requirements similar to broccoli (cabbage, cauliflower, collards, kohlrabi).
Cabbage	Thrives with celery, onions, and potatoes. Marigolds can ward off pests, but can harm cabbage if planted too close. Alternate rows of tomatoes or create a border of kale to ward off pests. Clover, lettuce, and weeds camouflage cabbage from pests.		Strawberries
Carrot	Radishes, peas, and sage can improve flavor. Onions, leeks and rosemary can repel root maggot flies.	Does not require a great deal of nutrients, so grows well with most other vegetables.	Dill and anise
Corn	Beans fix nitrogen and reduce armyworms. Alternate rows with bush beans, or allow pole beans to climb corn plants.	Reduces leafhoppers on corn. Gives shade to squash and pumpkins.	Quack grass (weed) makes nitrogen and potassium unavailable to corn, even when heavily fertilized.
Cucumber	Thrives with beans, cabbage, corn, peas, and radishes. Interplant with broccoli or corn to reduce cucumber beetles and bacterial wilt that the beetles carry.	Some varieties can inhibit weed growth.	Potatoes planted near cucumbers can be more susceptible to blight.
Dill	Grows well with lettuce, onions, and cucumbers.	Large flowers attract beneficial insects and repel harmful insects.	Carrots
Garlic	Grows well between rows of tomatoes, eggplants, and cabbage.	Repels pests of many garden plants.	Can be harmful to peas, beans, and other legumes.
Lettuce	Grows well with strawberries, carrots cucumbers, cabbage, beets, and radishes.	Grow near taller plants like cabbage, broccoli, and beans for shade cover.	
Marigold		Repels pests from cabbage, potatoes, tomatoes, and roses, but best not to plant directly next to food plants (may have negative impacts on growth).	Beans
Onion	Thrive with cabbage, beets, strawberries and lettuce.	Interplant with potatoes to repel beetles, and with carrots to rust flies.	Can be harmful to peas, beans, and sage.
Peas	Cabbage helps to prevent root rot.	Fixes nitrogen for corn, beans, potatoes, tomatoes, radishes, carrots, turnips, and cucumbers.	Onion and garlic may harm peas.
Potato	Beans, cabbage, corn and horseradish can improve growth and flavor.	Plant lettuce, radishes, and green onions with potatoes, as the potatoes take much longer to mature.	Raspberries, pumpkins, tomatoes, squash, cucumber, and sunflowers nearby can leave potatoes more susceptible to blight.
Tomato	Thrive with asparagus, broccoli, cauliflower, cabbage, carrots, and onions.	Deters pests from cabbage.	Black walnut trees and fennel. Do not plant where potatoes or eggplant was grown in previous 2 years.

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SPACING GUIDE

Proper spacing between plants will keep your garden healthy and bountiful. Using this guide will ensure that the roots and tops of your plants will not be in competition for precious resources, such as space for roots to spread, nutrients, water, and sunlight.

Plant	Seed planting depth	Intensive spacing (distance between plants in all directions)	Distance between plants for conventional spacing	Distance between rows for conventional spacing
Asparagus	6-10"		24"	36-48"
Beans (bush)	1"	4-6"	2-4"	18-36"
Beets	1/2"	2-6"	2-4"	12-30"
Broccoli*	1/4"	15-18"	12-24"	18-36"
Brussels sprouts*	1/2"	18"	18-24"	30-36"
Cabbage*	1/4"	15-18"	12-24"	24-36"
Carrots	1/4"	2-3"	1-3"	16-30"
Cauliflower*	1/2"	18"	24"	36"
Collards	1/2"	15"	15"	36"
Corn	1"	18"	8-12"	30-42"
Cucumbers	1/2-1"	12-18"	3-6"	14-42"
Eggplant*	1/4"	6-9"	8-12"	12-24"
Leaf lettuce	1/4"	6-9"	8-12"	12-24"
Melons	1/2"	36"	36-96"	72-96"
Okra	1/2"	18"	10-14"	24-48"
Onions (sets)	1"	4-6"	1-4"	16-24"
Peas	1"	2-6"	1-3"	24-48"
Peppers*	1/2"	12-15"	12-24"	18-36"
Potatoes	4"	10-12"	6-12"	30-42"
Radishes	1/4"	2-3"	1/2-1"	8-18"
Spinach	1/4"	4-6"	2-6"	12-36"
Squash (summer and winter)	1/2-1"	24-36"	39-96"	72-96"
Tomatoes (stalked)*	1/4-1/2"	18-24"	12-24"	36-48"

*Plants with this symbol are rarely direct seeded into the ground. However if transplanting, consider that the distances above would be the distance between the central points of each plant (i.e. the stem of most plants).

Resources:

Mapping, starting, and spacing guides were adapted from organicgardening.com's "Spring Planner."

Information for the companion planting guide was retrieved from *Companion Planting Made Easy* of Rodale's *Successful Gardening* series.



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