



## SEED PROGRAMS GARDEN CLUB

Garden club is a program for children to play, build social networks, and learn about how food is grown. Gardening provides children with an excellent opportunity to get outside, get their hands dirty, and explore their home environment. Gardening activities also help develop children's social skills by encouraging children to cooperate and build comradery with their peers.

Garden Club can be implemented by schools, girl or boy scout troops, churches, libraries, housing centers, and other community clubs. There is flexibility in the type of gardens that are grown, such as vegetables, herbs, and flowers for pollinators.

Thank you for your interest in creating a garden club. We hope this manual will support your efforts in getting it off the ground! This manual will walk you through some of the main steps in creating a garden - all the way from determining your garden's goals and management plan, through to implementing the gardening program. Thank you for spreading the joy of gardening!



## GOALS, MEMBERS, AND TIME

Determining the purpose of your garden is a vital first step to creating a garden. You also will need to determine who will manage the program, who will be club members, and what amount of time is available for the club.

### PURPOSE AND GOALS

The first thing you need to determine when deciding to plant a garden is the purpose of the garden. Understanding the purpose and goals of the garden will help guide your garden and program activities. You can pick one or more of the following gardening goals:

**Create a living classroom to educate children about gardening.** These gardening programs typically incorporate educational activities into their programs so that children can learn about plants, soil, and gardening through hands-on activities. The students would participate in planting seeds, transplanting seedlings, weeding, and caring for a garden. Educational activities can be planned around plant identification, insect identification, plant needs, pollinators, soil science, and plant pests.

**Improve the food literacy of club members.** Many children do not know where their food comes from, cannot identify different types of vegetables, and are hesitant to taste new vegetables. Growing a diverse set of crops can teach children what the different crops look like when they grow, how long it takes a fruit or vegetable to mature and gives them an opportunity to taste new vegetables. Sometimes children are more apt to eat a crop when they participated in growing it.

**Grow flowers to attract and increase pollinators.** Bees and pollinators are vital components to growing fruits and vegetables. Growing flowers near your vegetable bed will attract bees and other beneficial insects to the area. These insects spread pollen around to fertilize the plants to produce seeds and fruits.





## PURPOSE, MEMBERS, AND TIME

**Grow local fruits and vegetables for children or community members to eat.** The produce grown in the garden can be eaten by club members or donated to the community or food banks. The children can eat the produce while they are in the garden or eat it during snack time. They can also learn how to prepare the vegetables in the kitchen and learn recipes to experience how vegetables taste while raw or cooked. The garden could also incorporate community giving opportunities to allow the club members to grow food for people struggling with food insecurity. [Ample Harvest's database](#) can be used to find local pantries that accept donated produce.

**Create a sensory experience for children.** A sensory garden can be grown to stimulate the five senses of sight, smell, touch, taste, and sound. Gardens can incorporate a variety of different colors, textures, structures, smells, and tastes. Different flowers, grasses, vines, and forbs can be grown to discuss their different colors, structures, and textures. Herbs can be grown to enjoy their smells and tastes. Sensory gardens can also be a nice spot for a quiet moment to enjoy the many soft sounds that occur in a garden, such as bees buzzing and leaves rustling.

**Promote physical activity and mental health.** Gardening incorporates physical activity without appearing overly physical. Bending, digging, pulling weeds, and walking around the garden space gives children a opportunity to get outside and take a break from inside sitting activities. Gardening has also been shown to reduce anxiety and depression, and improve happiness, creativity, and self-esteem.

**Create team building or cooperation skills.** Children working in a garden often have to work as a team and in close proximity to each other. This helps build the children's communication skills and allows children to take joy in sharing experiences. Gardening gives children an opportunity to take turns and learn about patience as they watch and wait for their crops to be ready to harvest.



## MANAGEMENT & MEMBERS

Next, you will need to determine who will be the main person responsible for managing the garden and who will be the garden club members.



The garden manager(s) will be the main individual(s) responsible for acquiring supplies and resources, organizing gardening activities, coordinating schedules, and ensuring the garden's purpose is being realized. This person will need to dedicate the most amount of time to the garden.

The ages, interests, and physical limitations of the club members should also be considered. Activities should be appropriate for the children's ages and interests. Care should be taken to ensure the garden is accessible to everyone interested in participating. The number of participants also needs to be planned. The space should be large enough to give everyone a spot and activity. If many children want to participate, then subgroups can be created so that the space is not overwhelmed.

## TIME

The garden manager and club members' schedules should also be understood at the start of the program. Garden care can take two to four hours a week, depending on the size of the garden and number of participants. The manager could spend up to five hours a week planning activities for a small garden space. Gardening time would mostly be used to prepare educational activities, run the activities, weed the bed and surrounding area, and irrigation.

There might be long vacation or holiday periods during the program when management or members are not available to work on the garden. These periods should be planned for with extra support or longer periods dedicated to the garden after the break. Irrigation for these periods should also be planned. If planning time for irrigation is anticipated to be difficult, then a timed drip irrigation or sprinkler system is recommended and potentially worth the budget expenditure.



## GARDEN LOCATION

Deciding where your garden will be located is the next step. You will need to ensure you have long-term permission to use the space for gardening. Some important things to consider include:

### ACCESSIBILITY

Choose a location that is convenient and safe for the children to access. Also consider any accessibility challenges that current and future club members might have. You might also want to choose a location close to bathrooms so that the children can easily take a bathroom break and wash their hands when done with garden activities. Having raised beds and clearings between beds might help children with mobility difficulties.

### WATER

Irrigation or water for the plants is vital to the success of the garden's growth. You will want your garden to be near a water source, either to set up an irrigation kit or to hook up a hose for manual watering. Carrying water to the site could be possible but will be difficult to maintain.

### SUNLIGHT

Most vegetables and fruits require plenty of sunlight to grow, so you will want to choose a location that is in full sunlight for at least 8 hours a day. Before making a final decision on a site, observe the location throughout the day to ensure it is not shaded for long periods of time. Also take note that the sun angles and amount of sun will change with each season. If the location has less sun, then shade tolerant plants can be chosen.

### SOIL

The garden should have quality soil and drainage. The easiest way to accomplish this is by using leveled raised beds filled with bags of garden soil. If you would like to consider creating your garden using the ground soil, then you may choose to have your soil tested to determine nutrient level and if contaminants are present. Choose a flat area for your garden, without any slopes or depressions that would affect water drainage. Loam soil is ideal for plant growth, comprised of roughly 40% sand, 40% silt, and 20% clay.





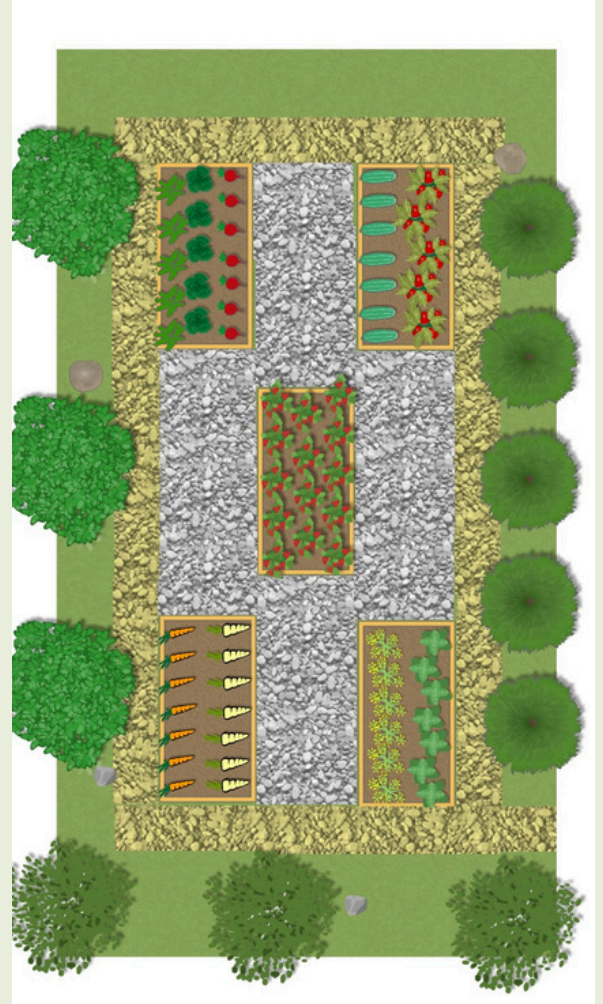
# GARDEN PLANNING

## PLANTS & TIMING

Next, you will need to decide what to plant and when. A starting point for this would be to determine your plant zone. This can be determined by using the [USDA Plant Hardiness Zone Map](#). You can also use the [Almanac Planting Calendar](#) to enter your zip code and receive a table indicating what and when to plant for the spring and fall planting seasons in your geography. This table also indicates when seeds should be planted indoors, when those seedlings should be transplanted into soil outdoors, and when seeds should be planted outdoors directly into the soil.

Drawing the layout of your garden on paper before buying the materials is also a good idea. You can do this using graph paper for rough measurements of the space. [Google Earth](#) can also help you visual the space aerially. You can then make a list showing where you want to plant each plant in the garden. Planning the garden is a great activity for the garden club members.

Drawing your garden plan will help you visualize everything you need and budget your materials. Remember to think about irrigation, planting space, and growth structure. Root vegetables will need deeper soil. [Companion planting](#) can also be considered when deciding what to plant in the same proximity. You should also consider space for the children to move around the gardens.



## STORAGE

A location to store your gardening supplies should be determined at the start of your garden club. This can be in a nearby building or in a storage shed or container. Think about the area's safety and chances of theft when considering storage. A lockable building or shed tends to work well for storing gardening tools and supplies.

## ANIMALS

Local animals should also be reviewed when determining the location or supplies needed for the garden. A fence around the garden could be considered if animals are known to be a problem. If you anticipate digging or burrowing animals, then lining the planter box is recommended.

## SUSTAINABILITY

Sustainability of the garden should be considered at the start of the program so you can continue the gardening program for several years. Many factors can go into ensuring your program will be sustainable.

**Community Buy-In:** Having the support of the local community will help support the sustainability of the garden. Keeping parents and the community informed about the garden work will help build this support. Community members might also have materials they can donate to the garden or experience that could support educational activities.

**Composting:** Long-term soil fertility should also be considered. Purchasing bags of compost each year could get expensive if funds are low. Incorporating a composting program into the garden club could help maintain the compost supply on-site and teach the students about decomposition and soil fertility. Alternatively, plant residues can be incorporated into the soil.

**Available Resources:** There could be local organizations and non-profits that can help support your garden program with various resources. [Seed Programs](#) can provide seeds to your garden club. [ChangeX](#) and [Kids Gardening](#) may have grants for school gardens. Rotary clubs are often a good partner for volunteers or donations.

**Long-Term Goals:** Thinking about your long-term vision for the project is a worthwhile strategy for the first year of the program. Use this time as a learning opportunity to figure out what works, what does not work, and what is missing that could enhance the gardening experience.





# STARTING THE GARDEN

## PURCHASING MATERIALS

Once you have a garden plan that fits within your budget, then it is time to purchase the materials and start your garden. Specific materials that you purchase for your garden will depend on your gardening goals, plan, and timeline. Aim to not spend your entire budget immediately so that you have some extra funds to use as you start the garden club and learn what is missing. Some materials and supplies you might need to start your project include:

**Planter boxes/raised beds:** This is the main location for planting. Typical box sizes are 4 ft x 4 ft or 4 ft x 8 ft. Raised beds tend to be smaller. You might want to line the boxes with plastic. You may also choose to plant your garden directly in the ground.

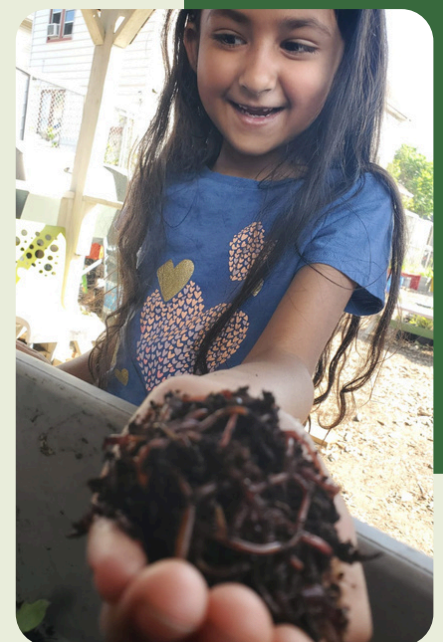
**Bags of garden soil and compost:** Enough to fill the boxes. You will likely need about 5 bags of soil to fill a 4 ft x 4 ft x 1 ft container. Calculate the cubic feet of soil needed for a planter box by multiplying the L x W x D of the container's internal dimensions. D should be the depth you want the soil to be. Topsoil to compost ratio should be roughly 2:1, however some vendors sell blends of topsoil mixed with compost.

**Irrigation supplies:** This will depend on what you decide for irrigation. It could be a hose, watering cans, or a drip irrigation or sprinkler system. If you choose a drip irrigation or sprinkler system, then go into a gardening store and discuss your needs with a specialist in the store. They should be able to walk you through all the needed supplies.

**Gardening tools:** This would be a mix of a shovel, trowels, pruning shears, hand rakes, plant supports (for climbing plants), trays (for transplants), gloves, buckets, and spray bottles.

**Composting supplies:** Worms and two plastic containers, one with a lid.

**Seeds:** Seed Programs would be happy to support your seed needs. Let us know what you are planning and we can help. You can also usually purchase seeds from a local hardware or grocery store on a seasonal basis. Seed Savers networks or gardeners in your community may also have seeds they can share.





## STARTING THE GARDEN

### CREATING THE GARDEN

Once you have the materials, it is time to get to work creating your garden. Use your plan to arrange the layout of your garden space. Specifics on how to arrange your garden will depend on what you chose for location and what you want to plant. This part of the program should be straight forward because of all of your previous planning. Garden club members can participate in creating the garden and mixing the soil.

### SET UP IRRIGATION

In some regions, precipitation might be sufficient for watering your garden and a hose can be used, as needed, to supplement irrigation. In arid environments, you may choose to set up an irrigation system. There are two main irrigation systems to consider: drip-irrigation and sprinkler system. Both systems can be run on a timer. Watering frequency depends on your location, temperature, precipitation, and season.

**Drip irrigation system:** These systems use the least amount of water and deposit drips of water directly to the soil near each plant. There are both high and low flow emitters for this system, which needs to be considered when determining watering time.

**Sprinkler system:** Another option is to set up a sprinkler system. This system has more evaporation and requires more water since the water is not applied directly to the soil. This system can be easier to set up than a drip irrigation system and might be less expensive.



### PREPARING THE GARDEN BED

Before planting make sure the planting space is free of weeds and the soil is not compacted. You can use the gardening trowels and hand rakes to dig out any weeds and loosen the soil to prepare the bed for planting. You can also use the shovel to remove any large weeds. Wetting the soil will make weeding and soil loosening easier. Check the area around the planter boxes for weeds as well. It will make sense to regularly manage this area to reduce the number of weeds that move into your garden area and maintain walking areas around your garden.

## PLANTING THE GARDEN

There are two main ways to plant a garden, direct seed or transplant. Direct seeding is planting the seed directly into the soil outside. Transplanting is first planting the seed in a container for propagation, then transplanting the seedling into the outside soil. The [Almanac Planting Calendar](#) provides tips on which planting method might be appropriate for each crop and season in your geography. Water the soil before and after planting.

**Direct seeding:** Most root crops do best when directly seeded into the garden. Transplanting these crops could damage the roots, which damages the vegetable. Some beans, peas, lettuce, and leafy crops also do well with direct seeding. Make sure the soil is moist before planting. Follow the directions on the seed packet about how to space each seed and to what depth. Once the seeds start to grow, you will need to thin the seedlings to prevent overcrowding. If the vegetables are too dense, then the growth and health of the plants will be affected. You can use scissors to cut the plant out at soil level so that you do not disturb the roots of neighboring plants.

**Transplanting:** Some plants do better when planted as transplants, either because they have lower germination or slow growth. Tomatoes, peppers, and eggplants are common examples of plants that do better as transplants. Depending on the season, it might be better to start the plants inside in a seed tray because you want to get an early start on the growing season and the outside soil is too cold. This could be particularly useful in northern climates.

To plant the trays, fill each tray cell with seed starting soil mix. Wet the soil so that it is damp. Excess water should drain out the bottom. Poke a 1/4-inch-deep hole in each cell and deposit two seeds into each hole. Cover the seeds with soil. To create a humid environment, you can cover the tray with plastic wrap or a plastic tray cover. This will also keep moisture inside. Leave small openings to allow some air to circulate. Remove the covering and move the seedling to a sunlit area once the seeds begin to sprout. Continue to keep the soil moist throughout this time.



Harden the seedlings outside for 1 to 2 weeks before planting them in the ground. Throughout that time, slowly increase the amount of time you leave the tray outside in the sun each day. To plant the seedling, dig a hole and fill the hole with water. Let the water drain out, then plant the seedling into the hole. Try not to disturb the roots as you plant the seedling.



## MAINTAINING THE GARDEN

Once the garden is created and planted, then you are ready for general maintenance activities. This would include watering, weeding, and keeping the soil nutrient rich.

**Watering:** Generally, watering is best done in the early morning or in the evening, when the temperatures are cooler. This will reduce evaporation and will give the water more time to penetrate deep into the soil. Watering in the evenings can sometimes attract slugs and disease depending on location. Frequency will depend on where you live, the crops you are growing, and the season. You will need to water your plants more frequently in the summer.

**Weeding:** This is a common activity that will be done throughout the gardening program. Weeds are plants out of place. Native plants can be considered weeds if you do not want them to grow in your garden bed. Also take care to weed plants along the sides of the garden beds. This will reduce the number of weeds in your garden bed. Removing weeds will improve the growth of your planted crops since it reduces competition for the nutrients and water present in the soil.

**Keeping the Soil Nutrient Rich:** This can be done by replenishing the soil with compost before each planting season and/or applying fertilizer to the garden soil. You can also cycle legumes into your planting bed. Legumes are nitrogen-fixers, meaning they can remove nitrogen from the atmosphere and add nitrogen to the soil. They do this by forming a symbiotic relationship with rhizobia bacteria on their root nodules. These bacteria convert atmospheric N<sub>2</sub> into ammonia NH<sub>3</sub>, which is bioavailable to plants. This process can reduce reliance on nitrogen fertilizers and improve soil health.

## HARVESTING

As crops mature, they will become ready to harvest. This is an exciting time for gardening club members as they are finally able to enjoy the fruits (and vegetables) of their labor! Wash the produce before eating it, especially if compost is used. The children can be involved in collecting the vegetables and preparing them to eat. Then they can sit and enjoy the taste of the different food grown in their garden.



## EDUCATIONAL ACTIVITIES

Educational activities can be run throughout the gardening club program. The children can participate in all the steps in planning, creating, planting, and managing the garden. They can be encouraged to explore the garden using all their senses. They can enjoy a quiet moment in the garden and try to listen for all the sounds that are present. They can also draw the different crops and show how they change as they grow. Some additional topics can include:

**Plant identification, germination, and pollination:** Children can learn about the different parts of a plant and how a plant develops from a seed. They can also learn about how plants are pollinated and develop their fruits and vegetables.

**Insect and pest identification:** Children can look for insects in the garden and in the soil. They can also take out books from the library to help them identify the different insects. If garden pests are identified, then children can participate in finding solutions to deter the pests. Library books are an excellent resource and can help children learn to problem solve.

**Plant needs:** Throughout the planning, planting, and harvesting process, you can discuss what a plant needs to grow and how those needs are being met in the garden. Compare it to what the children need to grow healthy and strong.

**Soil science:** Learn about the exciting world of soil! Soil is alive and an entire living ecosystem. Soil includes so much - sediment minerals, organic matter, water, organisms, and air.

**Water cycle:** Water is another important part of gardening and children can learn about the water cycle and all the places water may travel as it cycles throughout the world.

Many resources exist to support your educational activities. Some sites are included in the resource section at the end.

*Happy Gardening!*





## HELPFUL RESOURCES

**Growing Guides** (<https://www.almanac.com/gardening/growing-guides>): Guide about how to plant, grow, and harvest common vegetables, herbs, fruits, flowers, and more.

**USDA Hardiness Zone Maps** (<https://planthardiness.ars.usda.gov/>): A map, where you can enter your zip code and identify your hardiness zone.

**Planting Calendar** (<https://www.almanac.com/gardening/planting-calendar>): Enter a zip code to generate a table about optimal planting dates for each crop for spring and fall planting periods.

**Companion Planting Guide** (<https://www.almanac.com/companion-planting-guide-vegetables>): Tips on plants to plant near each other to deter pests, improve soil quality, and increase yield.

**When to Water your Garden** (<https://www.almanac.com/when-water-your-vegetable-garden-watering-chart>): Watering tips for your garden with a table about how much water each vegetable needs per week.

**How to Harden Plants:** (<https://www.almanac.com/video/how-harden-plants>): a video about how to harden plants before transplanting.

**Seed Programs Learning Center** (<https://seedprograms.org/learning-center/>): A page of learning materials for garden and agriculture programs.

**KidsGardening** (<https://kidsgardening.org/>): As a US-based, national nonprofit, KidsGardening inspires and supports garden educators, volunteers, and families by offering grants, original educational resources, and inspiration to get more kids learning through the garden, engaging their natural curiosity and wonder.

**first-the-seed Classroom Resources** (<https://www.firsttheseedfoundation.org/resources/>): Agricultural classroom resources and curriculum for various grades and age groups.

**Vermicomposting Instructional Video** ([https://youtu.be/7Qwb-acXjM0?si=N6zE8BmzUdmv2k\\_1](https://youtu.be/7Qwb-acXjM0?si=N6zE8BmzUdmv2k_1)): Instructional video about how to start a vermicomposting program.

**Ample Harvest Database** (<https://ampleharvest.org/find-pantry/>): This is a database to find local food pantries that accept locally grown produce for donation.