Sioux Lookout
First Nations
Health Authority

Food Education Programs Implementation Guide

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Executive Summary

Is your community interested in starting a small indoor growing program, in your homes or offices for personal use or in a learning environment like a school or community centre? Would community members or high school students benefit from learning home cooking skills?

Food Education programs promote small-scale growing operations custom to your community's resources and physical limitations. The goal of this type of program is to show that despite not having a large plot of land to grow food, local food production can occur in many ways and places, and by introducing these methods, healthier food growing and processing can be more accessible to all.

This guide provides community planners and service providers with an introduction to several Food Education programs that create opportunities for indoor gardening and home cooking skill development. This report includes project planning and design guidance, material lists, sample budgets and guidance on acquiring funding and partners to support your project.

This implementation guide focuses on three projects:

- Windowsill Gardens
- Hydroponic Towers
- Harvest to Table Classes using local food grown or harvested

Communities do not need to follow the models proposed in this document exactly, a different-sized indoor garden operation or alternative lesson plan may be better suited to your community. Consider the models outlined here as examples or starting points as you explore the opportunity. You don't have to use these ideas for teaching or education purposes either. You can use this guide to learn how to start an indoor garden for your own personal use, or look up a recipe from the resources we provide and cook or prepare a meal using store bought foods as well as locally grown foods. You can also use what you learn in this guide from the Food Education programs as a model to design your own courses based on local knowledge. Choose a model that best suits your needs or the needs of the community.

It is hoped that by having multiple growing areas, there will be multiple opportunities to teach community members about preparing healthy meals, growing vegetables and the potential that local food production could have in the community.

Please contact SLFNHA for additional support in designing your community Food Education program!

1.0 Why Should my Community Implement a Food Education Program?

Food insecurity is a common challenge for northern and remote communities across Canada, especially in Northern Ontario, where one in three people are food insecure[i]. Government and non-governmental actors throughout Ontario are working to address the increasing health concerns faced by children and adults in remote communities because of food insecurity[ii].

Food and Nutrition Education Programs can decrease the risk of food insecurity by introducing fresh fruits and vegetables into daily meal plans and by promoting safe food, good nutrition, health and cooking skills into schools and adult education programs. Educational Programs focus on making positive impacts through knowledge about how to prepare healthy meals and snacks and encouraging participants to try new ways of preparing healthy ingredients.

Growing and cooking your own food creates a positive connection between the food we grow and the food we eat. Cooking and harvesting classes offer meaningful life academic skills and can create improved physical health.

The goal of this food education guide is to promote food projects and activities in schools, at Elders Centers, at the Band Office, community centre or even in your own homes or offices for your own personal use. Educational activities can inspire curiosity, skill-development and confidence in students of all ages. This plan proposes that communities improve food security through the following activities:

- Windowsill herbs or greens
- Hydroponic/vertical) growing tower (a method of growing plants without soil in a vertical/upright fashion)
- Harvest to table classes – “how to cook harvested fruits and vegetables that you grow yourself” (this can be expanded using local knowledge and traditional foods from hunting, fishing or trapping).

This guide is part of a series of Community-Led Food Security Program Guides developed by Sioux Lookout First Nations Health Authority to encourage communities to design and run their own food production and education projects. Please contact your SLFNHA representative or contact our main office at 54 Front St., Sioux Lookout, ON P8T 1B8 or call us at (807) 737-5189.

2.0 Community-led Food Education Programs

Food Education programs can improve food security by teaching students and community members the importance of growing and preparing their own food through indoor growing techniques and educational classes. These indoor growing programs are great for remote communities with limited land for food production. Although, the programs in this guide do not need to be used for educational purposes. Small-scale vegetable and herb growing operations can be placed anywhere. Maybe you would like a windowsill garden at home to grow herbs or in the office to grow your own salad for lunch! Daycares, nursing homes or community centres could start indoor vertical gardening (hydroponics) to help supply healthy produce for meal times.

School and adult food programs provide an opportunity for children and adults to learn and understand:

- Where our food comes from and how to make healthy food choices
- What types of food they like to eat and how to make meals they enjoy with available ingredients?
- Traditional food preparation knowledge from local elders including recipes and practices that are becoming less commonly used.
- Traditional food procurement, learning about when, where and how to trap, hunt or fish for local animals.
- Traditional food preservation to learn local methods of preserving food.
- How to grow food from seed and what is needed to produce a healthy crop
- How to plan, build and grow, while developing planning, design and decision-making skills

2.1 Windowsill Gardens

Windowsill gardens are small container gardens on windowsills, balcony ledges or deck railings. They are usually placed inside and can range in shape and size. A windowsill garden is great for classrooms, office buildings, or at home.

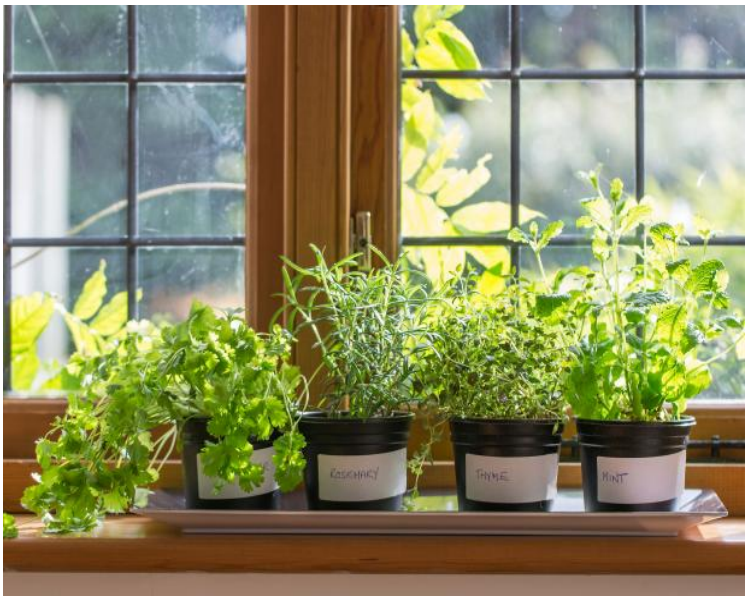


Figure 1: Windowsill garden example. Source: https://www.diynetwork.com/how-to/outdoors/gardening/how-to-plant-a-windowsill-herb-garden

Some of the benefits of windowsill gardens are:

- **Improved air quality:** Plants filter the air around them, absorb gases and emit oxygen. They also increase humidity levels which can benefit breathing.
- **Connection to the Earth:** Plants growing indoors can help people feel connected with Earth, and make sure nature is always visible
- **Educational opportunities:** Different plants thrive on different combinations of sunlight, nutrients and water. Teaching students about caring for plants can be a fulfilling experience for elders or other experienced gardeners and it is a great way to bring the community together.
- **Fresh Produce (vegetables, fruits and herbs):** Provides an opportunity for access to year-round fresh fruit, vegetables and herbs. Fruits and vegetables are costly and sometimes the quality is poor,

Windowsill gardens can be started by individuals or families or can be part of a community gardening effort, where plants are grown in community-owned buildings and maintained by volunteers who visit each site.

Details for planning and growing a windowsill garden are provided in Appendix A.

Figure 2: Lettuce grown in a windowsill garden Source: www.balconygardenweb.com

2.2 Hydroponic Tower Gardens

Hydroponics is a method of growing plants without soil in a horizontal (side to side) or vertical (up and down) fashion, where minerals are provided through a nutrient solution[iii] to the roots of the plants. Vertical hydroponics work by using a gravity fed system. The nutrient-rich water is fed from the top and collected at the bottom[iv].

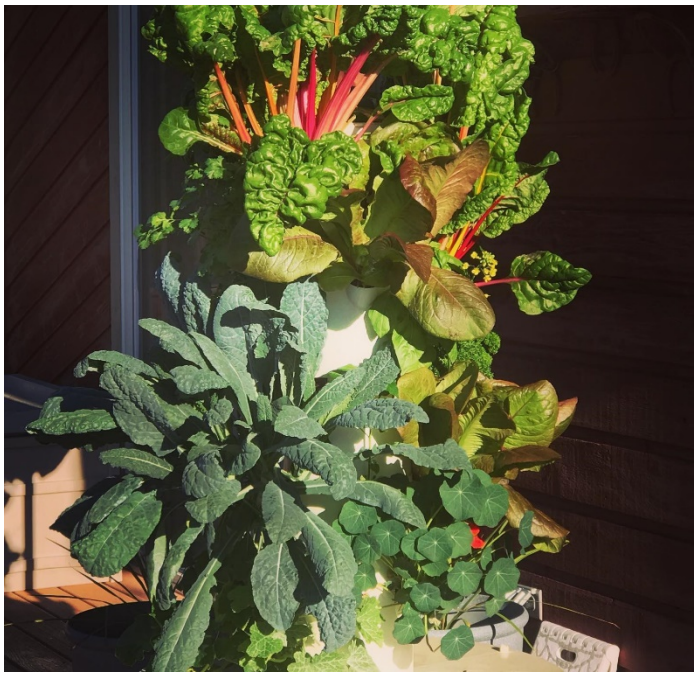


Figure 3: Hydroponic Lettuce Tower. Source:https://www.towergarden.ca/aeroponics

Vertical hydroponics has many benefits including:

- Good for small sunny places like balconies, patios and in front of windows
- Allows for higher harvest yield (crops) -
- Allows year around production indoors
- Can provide more than 90% productivity in water use, reducing wasteful water consumption
- Can be grown in natural light (sunlight) or artificial light with the use of growing lights.
- No soil is used. With no soil to attract bugs, soil-borne diseases are not an issue. If your community doesn't have suitable soil already, a hydroponic growing system will be much easier to start and maintain.
- Since these vertical gardens are grown using water instead of soil, weeds are not an issue.

Grow towers typically use pumps and motors to re-circulate the water and nutrient solution to feed the plant. Natural resources are conserved, nutrient usage is managed, and the plants are kept healthy without constant monitoring.

Hydroponic Grow Towers are perfect for those wishing to supply fresh herbs, leafy greens, and vegetables in larger amounts. Community organizations, churches, neighborhood associations, restaurants, schools, workplace cafes, food banks, and many more could benefit from the experience of growing hydroponically.

Your community's Tower Garden program could be a large-scale community garden operation where 20 or more towers are housed in a common area with access to water and a dedicated group of volunteers or employees. Your community Tower Garden program could also be a smaller-scale operation, where classrooms or families host a tower or two and enjoy their produce in exchange for participating in community learning opportunities.

Details for planning and growing fresh food with tower gardens are provided in Appendix B.

2.3 Harvest to Table Classes

Community cooking classes offer a space where people can learn valuable skills and celebrate food, especially food they have harvested themselves or purchased from a local producer. Cooking classes will teach students, families and individuals' skills and techniques to prepare nutritious, affordable and healthy meals. Locally grown food is not required, but recommended, to strengthen the connection between the learner and their food.

Figure 4: Cooking Traditional Foods. Source: http://www.rootstoharvest.org/education.html

Learning to cook and prepare food can help support healthy eating[v]. Cooking with whole ingredients reduces the amount of sodium, sugar and preservatives in a meal, compared to packaged meals. Preparing foods at home allows you to make healthier meals and snacks.

There are many people in the communities with lots of experience with traditional food preparation and recipes with traditional foods. Harvest to Table Classes are an opportunity to pass on this knowledge to community members and youth. It is recommended that the courses be developed with traditional recipes. However, this guide uses examples from Roots to Harvest, which is an organization in Thunder Bay, ON that offers Forest Meets Farm cooking courses. In this guide, we have provided a list of these classes as an example of a course outline that you could use for your own teaching purposes whether it be introduced into a school curriculum or taught at a community centre the options are endless. An example of a lesson plan and recipes are found Appendix C. The classes build healthy food cooking skills and food security by focusing on learning to use local ingredients (wild foraged or locally grown in a garden) in cooking and how to preserve food so that you can have access to local food all year round. (see Appendix C for a sample lesson plan and recipes for these courses):

- Course #1: Wild Cooking! - Foraging and Cooking Local Wild Edibles
    - Class #1: Wild Boreal Mushroom Soup
    - Class #2: Spruce Tip Tart Shells & Wild Blueberry Filling
- Course #2: Fill the Pantry - Canning, Pickling, Freezing, Drying and other Food Storage Techniques
    - Class #1: Jam Making – Wild Blueberry, Rosehips, Apples etc
    - Class #2: Freezing & Drying garden produce and wild edibles
- Course #3: Cooking from the Garden – Simple Dishes made with common Garden Vegetables
    - Class #1: Honey Glazed Carrots
    - Class #2: Moose Stew
    - Class #3: Signature Salads

These classes are suggestions only and may be modified to suit ingredients more readily available in your community. Many lesson plans and recipes exist online (see Appendix D for alternative lessons plans). These classes will work well with existing community garden projects or can be combined with the windowsill garden or tower garden programs outlined in this guide, or stand alone as a food security program, based on your community's needs.

Sharing, or “passing on” our skills and knowledge for others to use is a fun and important way to keep healthy cooking skills alive and thriving. Sharing a recipe or cooking skill is a valuable lesson in leadership, community and teamwork.

Figure 5: Preserving fresh foods is one way to make the most of locally grown vegetables, example

3.0 Implementation Overview and Planning

Are you ready to launch a Food Education program in your community? This section will guide you through the steps of designing and implementing your program.

3.1 Step 1: Assess Community Resources & Support

The most important step in designing and planning your Food Education project is understanding what resources are available to you in your community and what level of support or interest you can expect from your community members. You will probably need to conduct some research in your community to gather this information. Important questions to ask include:

- What food-security related programs and practices are already in place in my community? (e.g. Breakfast Program, opportunities where people learn from Elders), school programs), Have they been successful? Who is involved in running them? (possibly Aboriginal Diabetes Initiative ADI community workers, Student Nutrition program SNP workers, etc.)
- What are the most important food issues in your community to address? Which program would be most effective to address those issues?
- What skill sets already exist in the community that can help in the project’s process? (e.g. brainstorm a list of individuals with building, gardening, traditional knowledge/gathering, cooking and budgeting experience)
- How many people in my community are interested in learning to grow their own food?
- How many people in my community are interested in learning traditional knowledge?
- What locations could host my program?
- Are the elected leaders and program managers in my community supportive of food security-related projects? Are they willing to allocate funds to the project? If so, how much and for how long (one-time support or ongoing)?
- Can my local or regional Health or Education teams help operate or provide administrative support to a food security program?

Consider hosting a community information session or conducting a survey to measure interest levels in your community. Community-based data can be very helpful in supporting your project's funding applications if funding is needed. Always look for existing resources first before applying for funding.

3.1.1 Community Resources & Human Resources for Windowsill Gardens

Ensure that you have the right amount of community resources and human resources to ensure your windowsill garden program is well maintained.

- ***Space***: in a classroom, office, or community centre with access to a south facing window is perfect. If your program is based in private homes, make sure participants are willing to let visitors into their homes for education and promotion purposes. (see also notes on location in section 3.5)
- ***Electricity:*** for grow lights and providing consistent indoor heat.
- ***Local food champions (participants):*** to grow the food in their space and who would use it for community or personal programs. Teachers, daycare staff, health program staff may be a great place to find your champions. Families with young children may also be great candidates for windowsill garden programs.
- ***Administrative support:*** you should have a single contact for your program to aid in communication and someone who is collecting data on your program and what is produced.

There are lots of online resources to help you get started with a windowsill garden box. We have put together some online resources and attached them in an Appendices. See Appendix A for more thorough details on planting and maintenance tips for your garden.

3.1.2 Community Resources & Human Resources for Hydroponic Tower Gardens

Similar to a windowsill garden program, your biggest resource requirements have to do with where your gardens will be located (see Section 3.5 for more discussion on location requirements) and who will look after the gardens. Because tower gardens can produce much higher volumes of food, it's important to organize your human resources to minimize losses. If towers are located in community buildings where staff are regularly present, this may be easy to achieve. If you are going to have multiple towers in one location in order to grow a large volume of produce, you should consider having dedicated staff to maintain the system.

- ***Space:*** in a classroom, institution, community centre which participants/care takers have access as needed.
- ***Power/Utilities:*** access to electricity (for grow lights, timers and to run water pumps) and clean water.
- ***Staff/Program Champions:*** to plant produce in the classroom/community space and maintain the tower. Water and nutrients need to be added, need to check on lighting and water pump on a regular basis. Find more than one community champion to ensure there is a back-up when someone is out of town.

3.1.3 Community & Human Resources Required for Harvest to Table Classes

The majority of costs associated with running Harvest to Table classes are likely the human resources required to organize and run them. Your course instructor wages may be covered by your health team or education team if they wish to host the classes as part of their programs/curriculum (more information on bringing food classes into health or education programs is provided in Appendix D). Your course instructor could be a local caterer or chef, or someone with traditional cooking skills that wants to teach other community members.

You will also need someone to handle the administrative tasks of the courses, such as enrollment and providing communication services. If hosting the classes with existing community resources is not possible, you can hire an instructor to run the courses in your community. Organizations such as Roots to Harvest in Thunder Bay have lots of experience with running food education. Funding agencies may be able to help cover the costs of your courses and it is recommended that you explore funding options. Inexpensive options involve simply fishing or trapping with the participants and teaching the

class on the land or in a classroom using the local recipes. Keep in Mind these classes don't need to be used for education purposes either. You can use to this guide to find some great resources on how to cook and prepare food that you have harvested yourself, for your own personal use or in a small group without any formal training.

In general, for a Harvest to Table class you will need:

- Staff or volunteers with a passion for foraging/cooking/food preservation. Food preservation could be traditional methods of preserving food locally or Western versions including canning.
- This could be an elder, health staff, local teacher, caterer/chef or other specialist. Workshops can be offered for various time slots throughout the year based on food availability and staffing.
- Participants – for cooking classes the recommended class size is 5 to 10 people, ages 14 & up (but classes can easily be modified for younger participants if you wish)

3.2 Step 2: Choose Your Program(s)

Choose which program(s) will work best for your community or school based on the resources you have access to and what you think you could obtain given the level of support available in your community. You may wish to tie one of the programs outlined in this manual in with other programs or initiatives such as trapping, fishing, or hunting. What goals do you want to achieve with your project? Is it teaching children and adults how to grow their own food indoors, or is it learning to cook and prepare food from a garden already in place? Maybe your community would benefit from a combination of growing and cooking class programs. Consider your local resources and whether or not you plan to seek funding to support it. The great news is, each of these programs can easily be scaled up as interest in local food grows in your community. You may need to start small with only a few indoor growing areas or classes and that's a great place to start. Be open to expanding your program with time.

Indoor growing systems can be used all year round – will your program include multi-year funding sources or be self-sustaining? Do you plan to have your program running longer than one year? Most community-led food security projects are designed to continue long after they start. The three Food Education programs covered in this guide are summarized below to easily compare:

Table 1: Food Education Program Summary Table

Program	Best Suited For:	Not Ideal For:
Windowsill Gardens	• Small volumes of garden produce • Communities with limited soil availability/access • Educational programming tie-ins • Individual homes and classrooms • Communities with limited local experience in gardening • Communities with very short growing seasons • Buildings or homes with sometimes unreliable hydro system • Limited financial resources to run the project (can put more windowsill gardens for less money than other options)	• Medium to large scale food production goals

Tower Gardens (Hydroponics)	• Medium to large-scale food production goals • No suitable soil available in the community • Some local gardening expertise existing in community or ability to bring in an outside expert • Buildings with very reliable hydro/heating system • Strong local leadership support and community interest	• Limited local interest, financial or human resources to support the project • Communities with very limited technical repair/ troubleshooting resources
Harvest to Table Classes	• Communities of all sizes and experience levels • Classes can be modified to suit participant ages and abilities	• N/A – cooking classes can stand alone or be paired with other food security programs

3.3 Step 3: Engage with Community Participants & Choose Instructor/Manager

With a good idea of what resources are available and how much support or interest there is for your Food Education Program, now is the right time to engage with a local food, gardening, cooking or other food education expert who can lead major activities and help you work out the details of your Indoor Food Growing program and/or Harvest to Table classes (this individual may be yourself, or another member of your community!).

Reach out to community members who have expressed interest in the project in to confirm their participation level and the experience or skills they can contribute to the project. You may wish to create a team to oversee the project and gather more support for the operation. It is highly recommended that your project planning includes several people who can share the workload. SLFNHA can support you in developing your local program and can connect you with external service providers (see Section 4.0 for examples) if needed.

3.4 Step 4: Determine what Materials and Supplies are Needed

Together with your project support team, you can develop a detailed list of supplies, materials and equipment needed to start your Food Education Program in this step. Identify which materials or equipment you have available already and where you have gaps to fill. Gaps in the supply list may be filled by partner organizations, community-provided funding or funding from another organization.

3.4.1 For Windowsill Gardens

Decide if you want to grow, vegetables, herbs, or some of each. Think about how students/community members will interact with the garden. These factors will help you decide what kinds of containers to use.

For indoor gardens, your team will need to collect a supply of containers and soil. A wide range of pots can be used. Just make sure they have drainage holes at the bottom to avoid waterlogged plant roots. Plastic pots are the most common containers because they generally are inexpensive, can be reused, and are lightweight. You could also use clay pots, fiber pots, school milk cartons, growers' flats, egg cartons, plastic planting bags, and plastic soda bottle bottoms.

Choosing Plants & Starting Steeds

You can grow almost any common garden vegetable indoors provided you have a suitable container and you are providing enough moisture, heat and light for the plant's needs. Table 2 lists vegetables and herbs that do especially well in windowsill gardens[vi]. Although this guide focusses on best plants for windowsill growing, feel free to research other container options if there is a vegetable you think would be very popular in your program that is not on this list. Even potatoes can be grown in containers indoors.

Table 2: Plants Well Suited to Windowsill Gardening (source: www.gardeningknowhow.com)

Plants Well Suited to Windowsill Gardening	
Vegetables	**Herbs**
• lettuce • spinach • radish • carrots • chives • bush beans • green onions • tomatoes • peppers/chilies • garlic • peas	• oregano • basil • thyme • sage • parsley • dill • chamomile • marjoram • lavender

It's most likely that you'll be starting your windowsill garden from seed. For windowsill gardens, you can plant your seeds directly into your windowsill containers using indoor potting soil or soil you already have on site as long as you are adding nutrients/minerals and fertilizer to the soil. A good indoor potting mix is usually composed of peat moss, vermiculite, which is mineral (aluminum-iron magnesium) pellets and perlite (a non-organic additive used to aerate the soil – those round white specs found in soil). These mixes absorb moisture very well and resist compaction, but since they do not contain any nutrients, you must provide your plants with a consistent supply of fertilizer[vii]. You should be closely monitoring your seedlings for signs that something is wrong from the time that you plant the seeds.

Here are a few common problems to watch for:

- ***Seeds won't sprout:*** How old are your seeds? (The fresher, the better.) Keep in mind that certain seeds may take up to two weeks to sprout.
- ***Seedlings grow tall and thin:*** Leggy growth likely means your plants aren't getting enough light. Confirm that they're either under grow lights for 14–16 hours per day or outside in the direct sun for 6–8 hours daily.
- ***Slow growth and/or pale yellow leaves:*** Have you been feeding your seedlings? This could be a symptom of inadequate nutrition. Give them some fertilizer.

Tools and Materials

Windowsill gardens are simple and easy to install and maintain. A few simple tools and materials will be needed to set up your gardens. Make sure you gather the following items at the beginning of your project:

- Small container for starting seeds, such as repurposed cups, small milk cartons, egg cartons, egg shells, used nursery cell trays, nursery pots, tea tins, or coffee mugs
- A planter box or tray that fits the windowsill space
- Glass or plastic sprouting jar (for growing edible sprouts)
- Indoor potting soil
- Compost to add to the soil each time you plant
- A plate or tray to catch the water that will drain out of the containers
- Water
- Small watering cans
- Seeds

- Grow lights for supplement light in winter

There are many online resources to help you get started with setting up your windowsill garden. See Appendix A for more details on planting and taking care of your windowsill garden.

3.4.2 For Hydroponic Grow Towers

Choosing Plants & Starting Seeds

Hydroponic towers can grow a wide variety of vegetables, fruits and herbs provided the right amounts of light and nutrients are supplied to the system. The following plants do well in a hydroponic tower garden[viii]:

Table 3: Herbs Well-Suited to Hydroponics

Herbs Well Suited to Hydroponics		
Name	**Seeds**	**Cuttings**
Tarragon	No	Yes, from spring shoots
Peppermint	No	Yes
Green Mint	Yes, but difficult	Yes
Oregano	Yes	Yes
Basil	Yes	Yes
Sage	Yes	Yes
Stevia	Yes	Yes
Lemon Balm	Yes	Yes
Rosemary	Yes	Yes (preferred method

Table 4: Vegetables Well Suited Hydroponics

Vegetables Well Suited to Hydroponic Growing		
Common Name	**Seeds**	**Cuttings**
Lettuce	Yes	Yes
Spinach	Yes	Yes
Bok Choy	Yes	Yes
Tomatoes	Yes	Yes
Peppers	Yes, sometimes	Yes
Cucumber	Yes	Yes
Celery	Yes	Yes

Starting your Seeds for a Hydroponic Tower

Figure 6: Seeds Started in Rock Wool for a Hydroponic Garden (Source: hydro-industries.com)

Because a hydroponic tower is a soil-less growing system, planting your seeds requires a different growing container and some other considerations. It's a good idea to start seeds in a tray on a flat surface and transfer seedlings into the tower a couple of weeks after they've sprouted. A tower garden kit will include the materials needed to start your seeds. If you are going with the do-it-yourself method, supplies for starting seeds can be ordered online through several hydroponic suppliers. Rock wool is a common material used in hydroponic systems for starting seeds as it holds moisture well and provides support for the plant's root system. The following steps are recommended in starting seeds for use in a hydroponic system[ix]. The following steps for planting seeds in rock wool are based on those used by the Tower Garden Program, https://rootstoharvest.towergarden.ca/school-gardens:

1. Carefully wet the rock wool starter cubes for 30 minutes. When you're ready to seed, remember that each type of seed requires a different amount of seeds per hole. Generally:
   - For lettuce varieties, place 6–12 seeds per hole.
   - For herbs, place up to 6 seeds per hole.
   - For vegetables with larger seeds, like tomatoes, cucumbers, peppers and beans, place 1–2 seeds per hole.
2. Lightly fill each seed hole with dry, coarse-grade vermiculite. For smaller seeds, like lettuce, only fill the hole half full with vermiculite. This will keep just enough moisture around the seed for good germination. Gently sprinkle a little water over each hole to wet the vermiculite.
3. When you're done seeding, put a little water into the bottom of the container. If possible, use filtered water without chlorine.
4. If it's a warmer time of year, place your seeding tray outside in a partly-shaded area. If it's a colder time of year, place your seeding tray inside by a sunny window. After the seeds have sprouted, move them to a full sun area outside once all danger of frost has passed. Keep in mind that different seeds germinate at different rates.
5. When your seedlings are about three inches tall and have roots poking out from the bottom of the rockwool cubes, it's time to transplant. After 1–3 weeks, you should have healthy seedlings with a good root system growing from your rockwool cubes. At this point, your seedlings are ready for transplanting in your hydroponic tower. Place one seedling cube inside each net pot on the tower, gently pressing the seedling cube in until it touches the base of the net pot.

Tools and Materials

Choose Hydroponic System – Kit or DIY

Hydroponic systems are relatively simple. If you have some technically skilled individuals in your community who would volunteer time to build hydroponic grow towers for your project, you can save money building your towers with pvc pipes and submersible water pumps. You will still need to order some hydroponic-specific materials such as net pots, rockwool cubes, perlite-vermiculite and nutrient mix to grow food with your tower. If you or your team does not have much experience with power tools and Do-It-Yourself (DIY) projects, you may wish to purchase a hydroponic tower kit which will provide you with everything you need and simple assembly instructions. In this guide, we use the Tower Garden® hydroponic system for the kit; https://www.towergarden.ca/shop/growing-system and a tower garden DIY plan, website: https://www.youtube.com/watch?v=FcdwGlR5Si8 as examples of costs and materials. We encourage you to research other options too and decide which system will work best for your community. The Tower Garden® kit has been successfully used in private, commercial and education applications[x]. Materials required for either system are provided in Table 5.

Table 5: Materials & Tools for Tower Garden Kit vs DIY Tower

Materials and Tools Required to Build Hydroponic Tower	
Tower Garden® Kit	**DIY Hydroponic Tower**
• nutrient reservoir • swivel hose • reservoir lid • access pot lids • tower sections • net pots • shower caps • shower cap lid • support rods • extension rods • first pot screw • stainless steel wingnuts • 10ft. extension cord • propagation trays • submersible pump and timers • drainage hose • Tower Garden Mineral Blend Plant Food • measuring cup • pH test kits • germination tray • rock wool cubes • vermiculite	• white vinyl fence post (5” x 5” x 8) • white vinyl pyramid post top • 5 gallon black bucket with lid for the bucket • 3” pvc pipe • submersible pump with attachments (recommended: model ECO264) • LED wholesalers GYO2102 Hydroponic Grow Light 24-Hour Timer • Veranda 5/8 in. x 5/8 in. x 8 ft. white vinyl blind stop moulding - cut into twelve 4" pieces • spray adhesive • loctite pvc epoxy • 3" net pots • 1” narrow utility hinge • 1 ½” narrow utility hinges • 32 x 3/8” machine screws with nuts (48 pc) • clear silicone for aquariums • ½ inch nylon hose barb Tee • 10 foot length vinyl hose inner diameter ½ “ - outer diameter - 3/4” • 4X24 aluminum pipe for dryer vents • medium grit sandpaper

Tools Required: • None – assembly is completed by hand	**Tools Required:** • miter saw • tape measure • ruler • drill • various drill bits: - 1/2" for cut out pilot hole and also for tee barb, - 5/32" hole for hinges - 1/8" holes for water tray • jig saw with fine blade • soldering iron • clamps • exact-o knife • file

3.4.3 For Harvest to Table Classes

Harvest to Table Classes are designed to help your community members make good use of available produce and wild ingredients and learn some new cooking skills. Whether you do grow your own produce, or use wild harvested foods, such as berries, spruce tips, wild mushrooms, fish and game, to name a few, each class will focus on locally grown ingredients. You can bring in local experts, to forage/harvest usable plants and elders can be included on instructing food preparation and cooking classes using commonly used recipes. Plant walks can accompany the classes and is a great way to teach younger students about harvesting wild foods. If your community does not have an established gardening program or wild foraging program, consider launching one to accompany your classes. Many communities already bring students on fishing field trips, teaching them how to clean fish back at the school. Growing programs can enhance traditional skills programs that the community is running.

The list of courses outlined below are classes held by Roots to Harvest in Thunder Bay. They promote the use of local ingredients in classes and can be a good example of what can be adapted for your region using your own local recipes. These lessons can also be adapted for younger participants and could be fully integrated into existing health programs or the education curriculum. A sample of a Class Lesson Plan and Recipes can be found in Appendix C. Roots to harvest encourages you to visit their website http://www.rootstoharvest.org/forest-meets-farm.html, Forest Meets Farm page for webinars on their curriculum, a downloadable Forest Meets Farm toolkit with lesson plans and all of the recipes below, and a link to order their cook book which includes these recipes and more. You can reach out to Kim McGibbon for more information:

Kim McGibbon, Program Coordinator
Roots to Harvest
Thunder Bay, ON
807-285-0189
kim@rootstoharvest.org

Please see Appendix D for a list of alternative lesson plans and resources for food education classes.

- Course #1: Wild Cooking! - Foraging and Cooking Local Wild Edibles
    - Class #1: Wild Boreal Mushroom Soup
    - Class #2: Spruce Tip Tart Shells & Wild Blueberry Filling
- Course #2: Fill the Pantry - Canning, Pickling, Freezing, Drying and other Food Storage Techniques
    - Class #1: Jam Making – Wild Blueberry, Rosehips, Apples etc
    - Class #2: Freezing & Drying garden produce and wild edibles
- Course #3: Cooking from the Garden – Simple Dishes made with common Garden Vegetables
    - Class #1: Honey Glazed Carrots
    - Class #2: Moose Stew
    - Class #3: Signature Salads

Each course is based on a theme of helping participants develop food preparation and cooking skills as well as becoming more resourceful in how they use the food they have access to. Any class recipe can be switched out for a more appropriate recipe based on the community's expertise or available food resources.

Tools and Materials

The kitchen or space used should be well stocked with all the items needed to run your course. It is recommended to rent a commercial kitchen to host your cooking activities, but not required as other venues such as classes or community centre halls, and even an outdoor space will work. Ensure that all appliances are in good working order and that your space is well stocked with pots, pans, baking trays, measuring cups, measuring spoons and cooking utensils. Course #2 will require access to canning materials such as a canner pot, jar lifter, lid lifter, and jar funnel. Your course instructor will be in charge of collecting all other ingredients that aren't being gathered through gardening or foraging harvests and other common items like tin foil, parchment paper, take out containers and/or mason jars.

If your program budget will allow, it is recommended that students are provided with the kitchen tools needed to complete the classes to bring home and practice their new skills in their kitchen. In general, your Harvest to Table classes will need to be held in a space with the follow items/materials:

Table 6: Tools and Materials for Cooking Classes

Harvest to Table Class Materials & Equipment Needed	
Essential	**Recommended**
• Stovetop • Oven • Refrigerator • Sink • Pots & Pans in various sizes • Double boiler • Baking Pans and Trays in various sizes • Mixing Bowls • Measuring cups • Measuring spoons • Whisks, Wooden spoons • Spatula, Turner, Ladle • Colander	• Standing mixer or hand mixer • Sifter • Microwave • Kettle • Egg separator • Food Processor' • Blender • Kitchen Scale • Tongs • Kitchen Shears • Cooling racks • Mandolin

• Canning Kit • Knives for chopping and pairing • Cutting Boards • Peeler, Grater • Oven Mitts • Can opener • Rolling pin	

3.5 Step 5: Confirm Location(s)

At this point, it is important to make sure you have a location for the project to take place and confirm in writing how the space will be used and that the owners/managers of each site agree to the use of the space according to the project objectives. For example, if you are creating windowsill gardens or tower gardens in your public school, you will need to confirm with the school principal what this involves and that school administration will work together with your project team (for example: school agrees to cover hydro costs associated with grow lights and water pumps; or, agrees to allow access to the building as some crops may require watering on weekends and PD days). It is also important to confirm that the space you plan to use is big enough for the project. For example, if you order a 10ft wide windowsill garden, and only have a 3ft wide window, the garden may not work as intended. Work together with your project team to inspect possible sites and select the best options for your Education Programs.

3.5.1 Considerations for Windowsill Garden Locations

Consider each location for growing food indoors, including the following factors:

- ***Sunshine*** - Ideally your windowsill garden containers will be placed in south facing windows or glass doorways. Avoid spots that are heavily shaded in the mornings or windows that are poorly insulated (risk of frost).
- ***Water*** – Consider how containers will be watered and how far water will need to be carried to plants. Be sure to keep plant containers a safe distance from electronics or electrical outlets, which can be damaged if water is spilled.
- ***Traffic*** – avoid high traffic areas where containers are likely to be bumped or knocked.
- ***Electricity*** – windowsill gardens will need supplemental light in the winter months, ensure you have access to electricity and space placing your containers under grow lights.
- ***Access*** – depending on who is responsible for the windowsill garden's maintenance, you may need to confirm access to the building if you plan to utilize a community building.

Windows that face south and west are best and they usually receive enough light to grow leaf and root vegetables (beets, carrots, lettuce, onions and radishes) and herbs. You will need to spend a few days monitoring your window space to determine how much light is naturally available for an indoor garden[vi].

3.5.2 Considerations for Hydroponic Garden Tower Locations

Hydroponic grow towers are easy to install and best for locations with limited space for growing indoors. As long as your space has access to electricity, heat and water, your grow tower should be able to thrive. Once the grow tower is set up and running, it will be easy to maintain. Here are a few considerations when selecting your location:

- ***Light*** – As with all gardening, plants need a lot of sunlight to thrive. Generally, plants do well with 10-12 hours of sunlight per day. A minimum of 5-6 hours of full sun is generally required for vegetables. While a window with southern exposure may be ok, additional light is often needed, especially during the winter months.

- ***Temperature*** – Stable temperatures for growing hydroponics are required. 60-80 degrees Fahrenheit (15-26 Celsius) ranges work for most plants, while70-75°F degrees (21-24°C) is the best[vii].
- ***Air-flow*** – Indoor grow towers may benefit from fans, as they are helpful in maintaining good air-flow surrounding your plants and their root system.
- ***Storage –*** Your tower garden will require a secure storage cupboard or area nearby to safely store the mineral supplements and PH testing kits needed to maintain your system.
- ***Power Source*** - An electrical outlet nearby is preferred over a long extension cord. Select a waterproof connection when using outdoor extension cords. You will need a reliable electrical source to run your water pump. If plant roots dry out, they will quickly die.
- ***Water Source –*** Water will evaporate/disappear from your tower over time. Make sure a clean water source is nearby to top up the tank in the base of the tower as needed.
- ***Level Surface:*** Select a site for your tower garden that is level; a level surface is required for grow tower to work properly.

3.5.3 Considerations for Harvest to Table Class Locations

Generally, a commercial kitchen is the best space for food preservation and cooking workshops. Commercial kitchens have been inspected by Environmental Health Officers from the First Nations and Inuit Health Branch, for example, and have the right surfaces and tools to sanitize the space thoroughly between uses. However, home kitchens can be used for smaller classes, and a cooking class located in a community members home can be very insightful. You can also cook, prepare and preserve foods outdoors with a simple set up of some basic materials like tables, and kitchen tools. Many communities prepare their food outdoors, especially food that is harvested. Cleaning blueberries, pickling veggies, filleting fish and cleaning wild meat are all types of food preparation that can happen outdoors and does not require a large kitchen. Your cooking class location may to include:

- ***Water -*** your community class will need access to potable water for cooking and cleaning purposes.
- **Stove top** - depending on your class size you may need more than one cook surface. Hot plates can also be used to create multiple cooking stations.
- ***Oven*** - consider keeping your class sizes small if you don't have access to more than one oven in your cooking space
- ***Appliances*** – a well-stocked kitchen with blenders, standing mixers and food processors may be helpful in keeping cooking class time to shorter durations, but it is not needed.
- ***Enough counter space/ preparation surface*** - it will be difficult for participants to observe and participate in a cooking class with a small amount of countertop space
- ***Refrigeration -*** Your kitchen must have available space in a refrigerator to keep fresh ingredients stored at a safe temperature and possibly for use to cool food items
- ***Pantry/Dry Storage*** – Suitable space for storing dry ingredients will be helpful if you are planning on having multiple sessions. This way ingredients can be bought in bulk and stored nearby.
- ***Common Kitchen Tools/Supplies*** – the course instructor should inspect the cooking class location in advance of hosting any classes to make sure it is well stocked with all important tools and equipment include measuring cups and spoons, knives and cutting boards, mixing bowls, pots and pans, baking trays and pans and other items as required by the lesson plan.
- ***Outdoor Set up*** – tables, canning materials, knives and cutting boards can all be set up outdoors to demonstrate wild food cooking/prepping.

3.6 Step 6: Create a Budget

With a site selected, supply list and outline chosen, now a detailed budget for your Education Program can be developed. The budget must include start-up costs, materials needed for indoor gardening, tools for maintaining growing systems, useable items like fertilizer and seeds, ingredients (if not being donated by a local food program), any travel or professional fees required (if hiring outside supports) and rental costs (if needed) for hosting classes. Shipping fees also need to be included in the budget.

It's important to fully understand the costs of implementing/starting your food education program before you reach out to partner organizations or potential funders. The Sample Budgets provided in this section are examples only, to show what you might need to include in your budget and give you a sample of how to build your own. Make sure when building a budget to check local wages/hourly rates, ingredient pricing and shipping rates as these costs can vary widely by community. Many communities take a week off in the spring and fall to hunt/trap/fish on the land and host feasts for the community. This may be a good time to incorporate traditional food classes – when wild game is available. Classes could be planned in the weeks that follow as well.

See Appendix E for a detailed sample budget worksheet and contact us to request a blank excel budget table that will automatically update to give you an estimated cost for materials, transportation, shipping of materials, flights, human resources, etc; simply enter the local price and quantity you need.

There are many ways though, if you have a limited budget, that you can save on the costs of implementing a Food Education in your community. Consider the following cost-savings tips as you design your program:

- *Reuse/Repurpose existing materials on site* – Windowsill gardens can be made with yogurt containers, milk jugs or any other plastic container, just poke a couple of holes in the bottom for drainage. Garden Towers can be made from plumbing materials as long as you are handy with power tools and crazy glue.
- *Edit/Adjust Recipes* - Recipes used in your cooking classes should be chosen based on what ingredients you have available in your community, be creative and/or ask your students for help adjusting recipes to fit with local produce and wild foods.
- *Arrange alternate shipping options* – can you partner with other business bringing in cargo via other more affordable methods? Can you time your shipments to be sent via winter road?
- *Make your own soil* – Shipping potting soil for your windowsill gardens can be very expensive. Consider starting a composting program to build your own soil amendments so that you can use local materials. See Appendix A for more information on windowsill gardens and composting.
- *Bring your own* – Some kitchen tools, like knives for harvesting wild edibles or garden produce, and food containers can be brought by students

3.6.1 Sample Budget for Windowsill Garden Program

This budget assumes five homes or classrooms participating in the program, each tending four windowsill boxes. All costs are based on Sioux Lookout Home Hardware prices. This budget assumes some costs for program coordination, which is the largest expense in the sample budget – your current programs or band may cover some or all of this cost. Amending local soil and shipping materials by road would also lower the cost.

Table 7: Windowsill Garden Budget Sample

Windowsill Gardens Budget 2019			
Assumptions: 5 homes/classes participating with 4 window boxes each, potting soil is not available in the community, assumes shipping by air			
	Description	**Unit**	**Quantity**
1. Materials and Equipment for 4 window boxes			
A	Black window planter (6x6x24")	each	4
B	Potting Soil (highly recommend finding source in community or creating with compost)	each	1
C	Seeds – number of seeds depend on size of planters	Each	4
D	Garden Gloves – for each participant	each	4
E	Watering Cans	per ft	1
F	Hand trowel	pair	2
G	Jiffy Hydro Grow lights	each	2
H	Seed Tray Starter Kit - 35 cells (you can also use many recycled materials to start seeds indoors, yogurt cups, egg cartons)	each	1
A	Staff/Coordinators	hr	100
B	Planting/Harvesting/Maintenance	hr	0
3. External Resources (As Needed, Sample Only)			
A	Energy Costs	kWh	5
B	Training and Workshops	hr	4
C	Flight Travel Costs	flight	1
D	Shipping Costs - by truck	hr/truck	0
E	Shipping Costs - by air (See Appendix F for cost based on location)	lb	110

3.6.2 Sample Budget for Garden Tower Program

This Garden Tower budget assumes that the community is going to use the Tower Garden® kit to start its community garden and that it will start with approx. 20 towers (the sample budget below is for one Tower Garden® kit, but can be modified in the excel table for more). This is a large operation which will require some paid staff to tend and maintain the gardens. The largest cost is the purchase of the Tower Garden® kits, but after year 1, operating costs for maintaining the program will be minimal as no soil will need to be shipped and it's unlikely any additional external training or consulting will be required. Mineral supplement and pH test kits will need to be reordered on an annual basis, at a rate of one kit per tower.

Table 8: Garden Tower Program Sample Budget

Garden Tower Budget 2019			
Assumptions: 1 Tower with Grow Light Extensions from Tower Garden company, shipping by air, assumes a staffed operation, assumes initial training/workshop given by Roots to Harvest or other suitable trainer			
	Description	**Unit**	**Quantity**
1. Materials and Equipment for 1 Tower Garden Kit			
A	Tower starter Kit**	kit	1
B	Tower Garden Mineral Blend	2 gallon	1
C	Extension Kit	each	1
D	LED Indoor Light Kit	each	1
E	Tower Garden Dolly	each	1
F	Tower Garden PH Kit	each	1
2. Community Resources			
A	Training and Workshops	hr	100
B	Staff/Coordinators	hr	300
3. External Resources (As Needed, Sample Only)			
A	Energy Costs for grow lights	kWh	388.8
B	Training and Workshops	hr	20
C	Flight Travel Costs	flight	2
D	Shipping Costs - by truck	hr/truck	1
E	Shipping Costs - by air (See Appendix F for cost based on location)	lb	200

3.6.3 Sample Budget for Harvest to Table Classes

Table 9: Sample Budget for Harvest to Table Courses

Harvest to Table Courses Budget 2019			
Assumptions: class size of 10 students, teacher wage = $25/hr, Admin staff wage = $18/hr. Kitchen Rental covers utility costs and equipment needed			
** this cost may be covered by your community programs*			
*** Students may bring their own tools or equipment to limit this cost*			
	Description	**Unit**	**Quantity**
1. Wild Cooking! - Foraging and Cooking Local Wild Edibles			
A	Teacher/Instructor*	hour	48
B	Administration*	hour	6
C	Kitchen Rental*	hour	12
D	Foraging Basket**	per student	10
D	Foraging Knife**	per student	10
E	Wild Edible Identification Guide	per student	10
F	Additional Ingredients	$10/student	3
G	Consumable materials (e.g. tin foil, parchment paper, cooking oil)	Per Class	3
2. Fill the Pantry - Canning, Pickling, Freezing, Drying and other Food Storage Techniques			
A	Teacher/Instructor*	hour	48
B	Administration*	hour	6
C	Kitchen Rental*	hour	12
D	Mason Jars - 500ML	12 pk	5
E	Mason Jars - 250ML	12 pk	5
F	Canning Kit (If needed, kitchen may already have)	kit	2
G	Additional Ingredients	$10/student	3
3. Cooking from the Garden - Simple Dishes made with common garden vegetables			
A	Teacher/Instructor*	hour	48
B	Administration*	hour	6
C	Kitchen Rental*	hour	12
D	Take home containers/mason jars**	12 pk	5
E	Additional Ingredients	$10/student	3
A	Instructor	hr	20
B	Flight Travel Costs (if applicable)	flight	1
C	Mileage (if travelling by car)	per km	0
D	Meals & Accommodations	per day	1
5. Student Kitchen Tools ****Optional****			
A	*Optional - Student Kitchen Basics Kit -for students to use during course and keep	per student	10
B	*Optional - Student Canning Kit provided so they can continue canning at home	per student	10

3.7 Step 7: Investigate Funding Options

There are many funding agencies and organizations dedicated to improving food security and supporting food growing projects that can support your Education Program. Grants and Funds can be accessed through a detailed application process and many have strict deadlines for submission (see Section 4.0 on Funding). When meeting with either SLFNHA representatives or other food program resources, ask about other communities' who have been successful in securing funding for food security projects and learn about their process. Note that most funding agencies will take a minimum of three months to return their review of your application, and until an agreement is signed, no costs can be reimbursed.

3.8 Step 8: Advertising & Promotion

If your program is running outside of a school environment, you may need to advertise and promote your program to involve participants. Create flyers about the program post them or advertise on social media, for example, share on the community Facebook page or advertise on the radio. Clearly state what the objectives/purpose of your program are, what commitments participants need to make and who to contact to join the program. You may want to have welcome packages and program guidelines prepared to give participants when they complete their registration.

3.9 Step 9: Ongoing Maintenance

Maintaining your gardens is an important part of the gardening process. Maintenance tasks for Windowsill Gardens and Hydroponic Grow Towers include:

Maintenance for Windowsill Gardens

Maintaining your windowsill garden is like maintaining an outdoor garden but smaller and the soil moisture should be checked every day. If you are sprouting seeds, you can water a little bit every day to keep it moist. Once the seeds sprout, check the moisture with your finger to see if it is cool and moist below the surface, and then decide if it's time to add more water. Windowsill gardens that receive lots of direct light need more water than those exposed to dim light. If you are growing herbs, or lettuces and baby greens, make sure to harvest them when they are ready to eat.

Most plants are happiest when the humidity is 50% or higher, though they can usually survive at 30 to 40% relative humidity (note: you can purchase a humidity and temperature sensor for under $20 if you are unsure about the conditions). If the air is much drier than that, they are unable to absorb enough water through their roots to keep up with the water lost through their leaves. Misting your plants helps. Or try arranging your plants on a gravel-filled tray that contains about 1/4 inch of water. As the water evaporates, it will cause humidity in the air around your plants. Just be careful that the pots don't sit directly in the water[xi].

Indoor plants are usually not too fussy about fertilizers. The most important thing is to not overdo it. Follow the instructions on the package. Always water your plants well before applying any sort of fertilizer. A standard 10-10-10 formulation is fine for most indoor plants. Supplementing with an organic addition such as liquid seaweed or fish emulsion, or a bio stimulant, will provide some of the nutrients lacking in an inorganic plant fertilizer.

Maintenance for Hydroponic Grow Towers

For any tower garden, there are some guidelines to follow to confirm it is working properly and your plants remain healthy and productive:

- Check the water level weekly. During hot months, and also once you have large plants, check the water level at least twice a week.
- Check the pH twice a week and add mineral solutions to adjust your pH level (Tower Garden® provides mineral solutions and a pH test kit to assist with this). Yellowing leaves are a sign that your pH is out of the recommended range.

- Keep the shower cap holes clean and free from debris/dirt. You can use a toothpick to clean the holes.
- Keep roots away from the pump. Make sure that the pump is located to the side of the reservoir/basin and not directly underneath the tower. You can trim the roots that may be hanging in the reservoir.
- Clean the pump filter monthly. Unplug the pump, pull the pump up through the access port and remove the pump cover. Clean with water to remove debris. This will blow old root debris out of the filter into the bottom of the tank.
- Keep cool water (85°F/29°C or less) in your hydroponic garden. You can help keep the water cool by raising the tower off the ground with a platform or dolly, or by placing a mat underneath the reservoir.
- Rotate your garden if it is placed next to a wall where the sun shines on the same part of it every day. For best plant consistency, rotate the garden a quarter turn in the same direction each day or whenever possible.
- Large plants, such as tomatoes, peppers, green beans, etc., should be kept as small plants or trained/tied up strings or trellises/lattices.
- Good sunlight is very important for best growth of each plant.
- Keep enough water and nutrient solution in your reservoir so that the submersible pump stays completely submerged. Do not let your tank drop down more than halfway.

4.0 Sources of Funding

Food education programs are often implemented within the scope of local health or education services and programming in your community. Check with your local program managers to discuss your idea and which program(s) you'd like to have in your community and why. Costs can vary significantly based on how much local capacity you have to support the project. Whatever program you choose, there is likely a funding stream to support it offered through a public or private funding organization, which can help you expand the scope of your program or provide better materials to the program. Funding organizations also exist to cover wages for student summer jobs and youth internships; if you are looking for affordable staff for you program, these funding agencies can help.

Sioux Lookout First Nations Health Authority (SLFNHA) – Funding Application Support

Through our Approaches to Community Wellbeing (ACW) strategy, we can offer support with writing proposals for funding opportunities, finding training programs, and linking you to other resources where needed. SLFNHA staff have qualified nutritionists that can assist with your project and advising on the best food to grow, produce, and cook based on nutritional needs. Be sure to get in touch with us about your community food security project early in the planning process; we'll support your project as much as possible.

Sioux Lookout First Nations Health Authority
Approaches to Community Wellbeing
T: (807) 737-5189
54 Front Street, 3rd floor
Sioux Lookout, Ontario
P8T 1B8

Office Hours: Monday - Friday from 8:30am to 4:30pm; closed from Noon to 1:00 p.m.
Website: https://slfnha.com

4.1 Current Funding Available – Food Specific

The following funding opportunities are just some examples of what is available. Some programs have closed for the year 2019, but more projects under these funders may become available next year. It is important to check back frequently for new or renewed funding programs. You can contact the following organizations for the most current available resources related to your project.

Jennifer Wall
Ministry of Agriculture, Food and Rural Affairs
Agriculture Development Advisor (Kenora & Rainy River Districts)
Phone: (807)220-4290
Email: jennifer.wall@ontario.ca

Agriculture Information Contact Centre
Phone: 1-877-424-1300
Email: ag.info.omafra@ontario.ca

Che Curtis-September
Northern Development Advisor
Ministry of Energy, Northern Development and Mines
Phone: 807-737-6692
Email: che.curtis-september@ontario.ca

Through the Agriculture and Agri-Food Canada (AAFC), the *Indigenous Agriculture and Food Systems Initiative* is a five-year (as of 2018), $8.5 million initiative designed to support an approach to producing fresh food within an Indigenous community, and helping to plan and design the means in which that agricultural production can occur. They will also support developing a food system within an Indigenous community to access healthy food, while also providing an opportunity for Indigenous Peoples to share their knowledge and experiences, and market and sell their agriculture products (This could include hydroponic growing operations and windowsills gardens on a larger scale). The maximum contribution to a project will normally not exceed $500,000 per project, per year or a maximum of $2.5 million over five years. The initiative will provide funding for up to 90% of the project's total eligible costs.

The eligible costs categories under the Initiative include:

- Administration.
- Salaries and Benefits.
- Capital Assets and costs related to the planning and design of infrastructure.
- Contracted Services.
- Travel.
- Other Direct Project Costs.

Source: Indigenous Agriculture and Food Systems Initiative Program Guide

The Rural Agri-Innovation Network (RAIN) offers the *Sustainable New Agri-Food Products Productivity Program (SNAPP Program)* to support Northern Ontario agriculture and food producers, businesses, collaborations, communities and First Nations to create new products, extend the growing season, enhance productivity, and adopt clean technology to support improved environmental performance while fostering business growth. Up to $5,000 for single applicants at 75% cost sharing, and up to $15,000 for collaborations of 3 or more entities at 75% cost sharing. Applications were accepted up to March 2019, but always check back to see if any new programs are available.

Eligible projects included:

1. Season Extension – Projects that will enable producers to extend their production season, or to extend the seasonal availability of their perishable products through storage.
2. New Products – Projects that enable agriculture or food producers to create primary or processed products that are new to the business.
3. Productivity Enhancement – Projects that utilize innovative technologies or processes to increase efficiencies in their operations.
4. Clean Tech in Agri-Food – Projects that adopt clean technology at the farm/business level and support improved environmental performance while fostering productivity, growth and competitiveness.

Source: SNAPP Program Information

The Local Food Investment Fund offered by Greenbelt Fund offers funding opportunities for projects that encourage and supply healthy eating opportunities for students in Ontario. It can cover up to 50% of project expenses.

Eligibility:

- Increasing the amount of Ontario food purchased by public institutions
- Increasing market access for farmers and processors in order to increase local food choices
- Improving the understanding of where local foods can be found, what local foods are available and how to use them.

All grants are closed for this year, 2019, but keep checking back as new programs may become available.

Source: Green Belt Grant Information

The Local Food Infrastructure Fund is a 5-year, $50 million initiative ending March 31, 2024. The program aims to strengthen food systems and to facilitate access to safe and nutritious food for at-risk populations and is part of the Government of Canada's Food Policy. There are two streams to this fund; one is aimed at small community-based organizations and will allow them to improve their infrastructure and purchase equipment that is directly related to the accessibility of healthy, nutritious, and ideally, local foods within their community. The second is aimed at larger organizations, and will target groups of community, private, academic and other organizations to reduce food insecurity in a sustainable manner by strengthening or establishing a local food system.

Eligibility:

- community or charitable organizations
- Indigenous groups
- municipal and regional governments in areas where there are no not-for-profit organizations that provide food services

The first stream applications are due by November 1, 2019. The second stream projects are scheduled to launch in 2020, and application can be submitted early 2020.

Source: Local Food Infrastructure Fund

4.2 Current Funding Available – Generic Funders

The *Northern Community Capacity Building Program*, offered by NOHFC, helps Northern Communities develop the capacity to promote, attract, and support economic growth in existing and emerging priority economic sectors. Capacity building allows northern communities to respond to their economic opportunities and challenges according to their individual priorities, and to pursue regional collaboration to advance common goals in order to strengthen Northern Ontario's competitive advantages. For community-based projects, the amount of assistance will generally not exceed $50,000. For regional, partnership-based projects, the amount of assistance will generally not exceed $100,000.

Eligible projects may include:

- Sector-based research projects that align with the priority sectors and are supported by existing community and regional strategic plans or initiatives
- Strategic planning
- Infrastructure requirement studies
- Capacity assessment

Source: Northern Community Capacity Building Program Information

FedNor, targets its support to help communities create the conditions necessary for economic growth and development. This includes investments in projects such as strategic community and business planning, strengthening of communities' industrial and business assets, implementation of priority initiatives, as well as support for youth internships.

Eligible projects may include:

- Strategic and business planning, sector or industry analysis, feasibility, marketing and engineering studies, recovery plans, workforce attraction and retention strategies, community investment readiness plans, inventories of community assets and community profiles;
- Strengthening communities' economic foundations, including industrial and commercial assets and industrial/business parks, downtown revitalization, and waterfront development;
- Implementation of priority initiatives identified in economic development plans that demonstrate strong economic results; and
- Youth internships to assist with projects related to community economic and business development.

Other activities related to community economic development necessary to further an economic goal in Northern Ontario may be considered on a case-by-case basis.

Source: FedNor Community Economic Development

Table 10: Funding Sources and Types of Support

Eligibility	Agricultural Activity				
Funding Program	**Flower Gardens**	**Agro-Forestry**	**Community Gardens**	**Seasonal Agriculture**	**Year-Round Greenhouse**
IAFSI	**X**	**X**	**X**	**X**	**X**
SNAPP	**X**	**X**	**X**	**X**	**X**
NCCP	Non-capital projects only				
CAP	**X**	**X**	**X**	**X**	**X**
AAFC Programs	**X**	**X**	**X**	**X**	**X**
FedNor	X	X	X	X	X

You may need to adapt your program goals to meet the funding requirements. For example, community gardens can be used to encourage healthy food options and lower diabetes, but also can be a source of future economic development through the creation of a business.

5.0 Training & Education Resources

Implementing food security projects can be daunting if you don't have many local resources to draw from. Thankfully, indoor gardening and cooking classes are fun and easy to participate in. You can start small and build your project as local capacity grows. There are also lots of resources are available online (see this report's Appendices for links to online resources and guides for each program type). However, if you are making the investment in a large hydroponic growing garden or you are going to teach courses that involve wild food foraging, you should make sure you have a local expert on hand. If you can't find someone within your community who has this expertise, you may want to consider external resources for training and technical support to ensure your projects success. To build local capacity, training through online and continuing education can also help you fill knowledge gaps.

5.1 Training & Education Resources

One of the most critical aspects of a local food project is the human resources that your community can rely on to implement your programs, maintain them, and in the future expand them. If your community is still seeking the personnel to fill those roles, when they are found, the programs outlined below can provide potential candidates with the confidence and skills to be a knowledge source for community members regarding local food and food preparation.

Roots to Harvest – Practical, Theoretical & Educational

Website: http://www.rootstoharvest.org/
Phone: 807.285.0189
Email: info@rootstoharvest.org
Office Address: 450 Fort William Rd, Thunder Bay, ON P7B 2Z6
Office Hours: Monday to Friday, 9 AM – 5 PM

Roots to Harvest is a non for-profit organization located in Thunder Bay, dedicated to working with youth and using food as a tool to connect, mentor and provide direction in youths' lives. While Roots to Harvest is focused on its key target audience, the organization's team of skilled growers is open and available to working with First Nation communities as a resource for planning, starting or operating a food growing operation or course. These include raised bed building, garden start up, planting, care harvesting, and cooking and preserving food. In regards to grow towers, Roots to Harvest staff can assist with the initial building and planting and then provide on-going support regarding maintenance and harvesting. Their specialty is in how to use garden spaces as programming tools to both get people excited about growing food but also around connecting with each other.

- Facilitation/Training fees - Roots to Harvest charges $200 for a half day and $400 for a full day. If travel to the community is required, approximate costs are:
    - Flights $500-$1200
    - Accommodation - $100 a night (or no cost if community has free housing options)
    - Meals - $40 a day

The organization has several operating urban farms in Thunder Bay and can offer community members the ability to get work experience through training on their farms in Thunder Bay, or they can send Roots to Harvest team members to your community to provide training sessions for a fee.

Growing Our Futures – Royal Roads University

Website: https://secure.royalroads.ca/cscourses/growing-our-futures
Phone: 250.391.2511
Email: continuing.studies@royalroads.ca
Campus Office: 2005 Sooke Road, Victoria, BC V9B 5Y2

Growing Our Futures is offered by Royal Roads University and is a practical, hands-on training program focused on providing Indigenous students interested with the knowledge on how to grow native plants for ecological restoration, landscaping and food production. In this ten-week program, students will develop knowledge and skills in:

- Native plant identification.
- Native plant seed collection.
- Native plant propagation.
- Employment and entrepreneurial skills.
- Cultural knowledge of native plants (as provided by community knowledge keepers).

Growing Our Futures is designed to help students become job-ready, and is enhanced with cultural activities, support from Elders, and field visits to restoration sites and native plant nurseries. The program is delivered within host communities in order to reduce barriers to attendance and to ensure as much relevance as possible to community interests and opportunities.

Sustainable Food – Confederation College

Website: https://www.confederationcollege.ca/ce-program/sustainable-food
Phone: (807) 475-6110
Email: ce@confederationcollege.ca
Campus: Online/E-Course; Head Office: 1450 Nakina Drive, P.O. Box 398, Thunder Bay, Ontario, P7C 4W1

The Sustainable Food, Recognition of Achievement Certificate explores the practices, principles, and philosophies involved in local food system development. The focus is on increasing both theoretical and hands-on knowledge of regional food initiatives across Canada, alongside international best practices. In addition, there is a specific concentration on applied learning, online networking and community research. This program is designed for students

who have a desire to learn about leading concepts and ideas in sustainable food and farming. Courses will provide critical analysis of our food systems, and students will network in an online community environment.

Appendix A: Windowsill Garden Resources

This Appendix Contains:
Plant-Specific Planting and Maintenance Tips
Indoor Windowsill Gardening Advice
The information is adapted from online resources which are listed below

INDOOR GARDENING: PLANT-SPECIFIC PLANTING AND MAINTENANCE TIPS

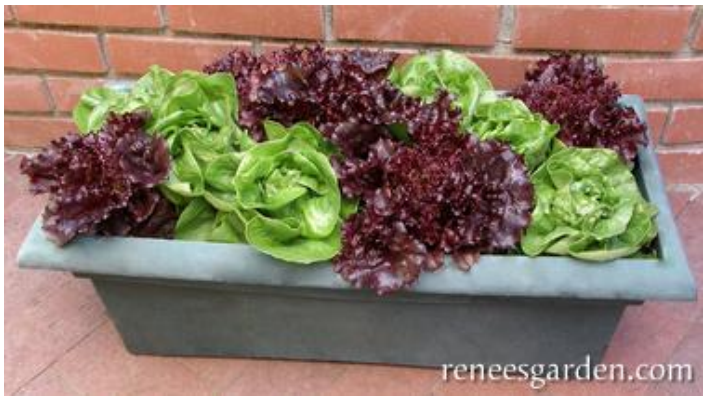
Text By: Bonnie L. Grant, Certified Urban Agriculturist & Becca Badgett, Co-author of How to Grow an Emergency Garden

Compiled from: https://www.gardeningknowhow.com/special/containers/winter-windowsill-garden.htm

It is so nice and convenient when you can snip a few fresh herbs or greens from your indoor garden while cooking. Herbs and common vegetables can be grown in almost any type of container as long as it has drainage and is filled with rich soilless potting mix. This section contains detailed advice on how to care for vegetables and herbs that do well in a winter windowsill garden box. Guides are presented for the following plants:

1. Lettuce
2. Radish
3. Carrot
4. Cherry tomato
5. Hot pepper/ Bell pepper
6. Onion
7. Spinach
8. Rosemary
9. Chives
10. Cilantro
11. Tarragon
12. Basil
13. Parsley
14. Oregano

1. How To Grow Lettuce In A Container



Container growing lettuce is a common practice for small space gardeners and indoor gardeners. Lettuce is a cool season crop and leaves develop best in cool but not chill temperatures. Growing lettuce in containers also allows you to control weeds and pests more easily than in a large gardening space and affords quick access when you want some leaves for a salad.

Planting Lettuce in Containers: Growing lettuce in containers requires the right type of pot and planting medium. Lettuce needs ample room for roots but you can grow several varieties in 6 to 12 inch pots. The greens need a consistent supply of moisture as they are almost 95 percent water but cannot tolerate wet roots. A clay pot provides a permeable surface that can evaporate any excess water and prevent soggy roots. Make sure there are adequate drainage holes in whatever container you chose.

Planting lettuce in container gardens can be done by direct sowing or transplants. Prior to planting add ½ tablespoon of time release fertilizer per gallon of soil. Transplants should be buried ¼ inch deeper than they would be in garden soil

and set 6 to 12 inches apart. Seeds are sown when soils are not frozen, ½ inch deep and 4 to 12 inches apart. Leaf lettuces can be closer together than head types.

Use a professional soil mix for planting lettuce in container situations, as the mix is formulated to hold water and provide nutrients. A soil mix is usually peat or compost, soil, and either vermiculite or perlite for water retention. You'll need 1 to 3 ½ gallons of soil depending on the size of your container.

Best Types of Container Lettuce: Some recommended varieties for growing lettuce in pots are Black Seeded Thompson and red or green oak leaf types. Loose leaf lettuces are better suited to pots than head lettuce. The most important resource when growing lettuce in containers is water. Lettuce has shallow roots and responds best to consistent, shallow watering. Plants grown in the garden need at least an inch per week; lettuce in pots need a bit more.

There are numerous pest that enjoy lettuce as much as you do. Combat them with blasts of water or insecticidal soap; and for slugs, trap them with containers of beer.

Harvesting Container Growing Lettuce: Cut the outside leaves of loose lettuce when the leaves are young. The leaves will grow back and then you can cut away the entire plant. Always cut lettuce when it is tender as they are quick to bolt and become bitter.

2. How To Grow Radishes In Containers

Radishes are one of the fastest growing vegetables. Patio and small space gardeners may wonder, "Can radishes grow in containers?" The answer is yes. Planting radish seeds in pots produces the food quickly and with minimum effort. Start your garden early when you learn how to grow radishes in containers. You and your family will soon be snacking on the zesty globes in just about a month.

Radish Seed Germination: Planting radish seeds is also a fun project for kids and helps them learn about how plants grow. Radishes are cool-season vegetables that produce the smaller, sweeter vegetables in spring. There are early season and late season varieties of radish. Start the late season radishes in late summer to early fall for a crop of larger, more pungent globes. Radish seed germination does not require any special pre-treatment and will occur when the seeds are sown on top of the soil or with just a dusting of cover.

How to Grow Radishes in Containers: Container gardening radishes requires a wide gallon pot and well-drained soil with rich organic amendments. Use a vegetable starter mix or make your own with a combination of compost and peat mixed with a small amount of sand or other grit. Mix in a vegetable fertilizer before planting to jump start root growth after radish seed germination. Ensure that the pot you choose has a good drainage hole and use unglazed pots that encourage evaporation of excess moisture. If you use a saucer, make sure it is not filled with water constantly.

Planting Radish Seeds: Radish seeds are tiny, so you may scatter the seeds over the prepared soil or use a special seeding tool to individually place the seeds. After germination, you can thin seedlings to ½ to 2 inches apart, depending on the variety. For best results, brush ¼-inch soil over the surface of the seeds. Keep the pot evenly moist and place it where it is sheltered from high wind and gets at least six hours of sunlight.

Harvesting Radishes: The roots are the edible part of the radish plant. They begin to swell and form the vegetable soon after radish seed germination. Watch the plants carefully and ensure that the tops of the roots are covered with soil to prevent splitting and drying. Harvest radishes as soon as they are an edible size. The smaller globes have the most spice and the larger vegetables more mellow. Radishes form quickly and should be pulled as soon as they are ready to prevent the roots from getting pithy and damaged.

3. Tips for Growing Carrots in Containers

Growing carrots in containers is an excellent project for early spring or fall, as carrots prefer cooler temperatures than vegetables of summer. Planting a crop of container carrots during these seasons can result in a worthwhile harvest. You may hear that container grown carrots or carrots grown in the ground are difficult. While carrots can be considered finicky under some growing conditions, once you learn how to container grow carrots, you'll want to make them a regular planting.

How to Grow Container Carrots: Grow carrots in containers in soil that is lightweight and well drained. Grow carrots in containers that are deep enough for the carrots' development. Containers should have drainage holes, as root crops may rot if left in soggy soil.

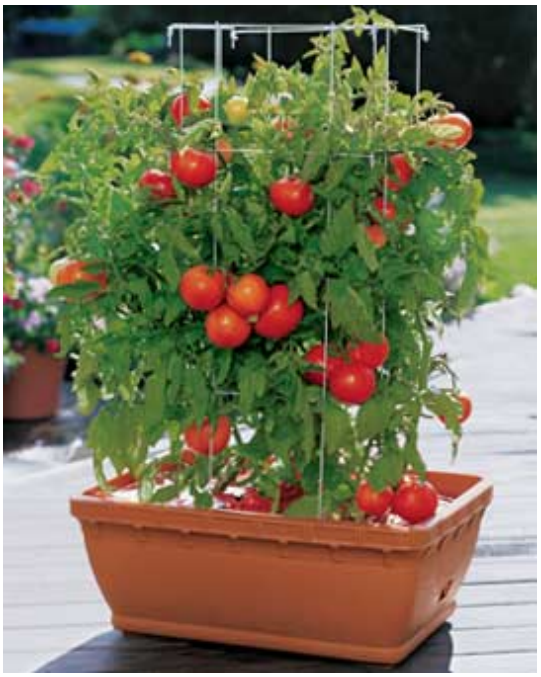
Miniature and Oxheart varieties are most suitable when you grow carrots in containers. Roots of these carrots are only 2 to 3 inches long at maturity. They are sometimes called Amsterdam varieties. Container grown carrots need regular moisture. Containers require watering more often than crops in the ground. Mulch can help retain moisture when you grow carrots in containers and help keep weeds down. Growing carrots in containers, as with other root crops, produce better with little root disturbance, such as that of pulling weeds.

Ideal Temperatures for Container Carrots: Plant container carrots outdoors when temperatures reach 45 F. (7 C.). Growing carrots in containers produces the best formed carrot before temperatures reach 70 F. (21 C.), but successful production of growing carrots in containers occurs between 55 and 75 F. (13-24 C.) When growing carrots in containers in late summer, provide a shady area that can keep temperatures 10 to 15 degrees lower than in sunny spots.

Nutrition for Container Carrots: When you grow carrots in containers, fertilize with a balanced plant food that is light on nitrogen, the first number in the three- digit ratio. Some nitrogen is necessary, but too much can encourage excessive growth of foliage with less going to carrot formation.

Container Carrot Maintenance: Thin seedlings of growing carrots to 1 to 4 inches apart when they are 2 inches in height. Most varieties are ready for harvest in 65 to 75 days after planting. Containers allow the flexibility of moving the crop to a cooler spot or covering if temperatures go below 20 F. (-7 C.). Container carrots can sometimes be overwintered for an early spring harvest. Carrots that are over-wintered can be used as needed, as growth will slow in temperatures below 55 F. (13 C.).

4. Tips on Growing Cherry Tomatoes



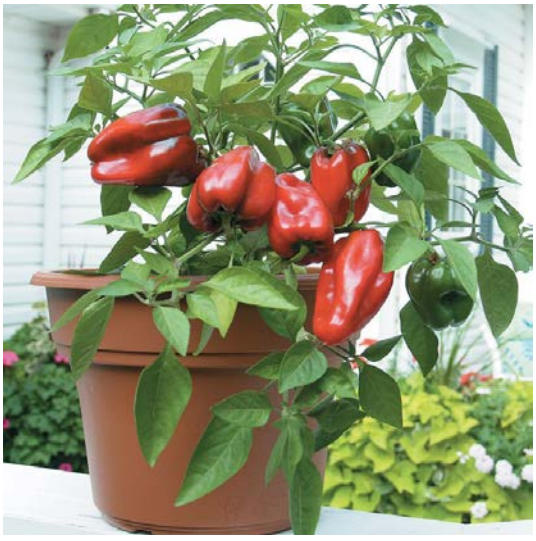
Tomatoes are one the most versatile and widely used vegetables in the garden. They are used in salads, soups, sauces and the like. Not only are they used for a lot of things, but there are many different types of tomatoes.

Nutrition Needs of Cherry Tomatoes: One of the best tips on growing cherry tomatoes is to put limestone in the bottom of each of the holes before putting the plants into the container. This will help prevent blossom end rot. Make sure when growing cherry tomato plants that you fertilize the soil. You can use a starter fertilizer in the beginning. This gives the plants a good start. After that you can side dress the plants as necessary.

Maintenance of Cherry Tomatoes: When growing cherry tomatoes, pinch off the suckers. This is the new growth that appears where the branches meet the stalk, or "V." These little suckers will rob the plant of nutrients. Pinching them off makes sure your growing cherry tomato plants will continue to flourish. You may also want to tie the plants to a stake so they stay upright. Once your plant is full of tomatoes, it will get heavy. This keeps the cherry tomatoes off the ground too. When planting cherry tomatoes, make an allowance for the space needed for each of the full-grown plants along with stakes and ties.

Picking Cherry Tomatoes: The grow time of cherry tomatoes is about a couple of months. This can be quicker or slower depending on the temperature of your home, nutrients in the soil and level of moisture. Watch the tomatoes for signs of ripening, such as turning red. When they are red (or whichever color they are supposed to be dependent on variety), you can pick them. The riper they are, the easier they are to pull off the plant. Simply pick and enjoy throughout the year!

5. Growing Peppers in Containers



Peppers, especially chili peppers, hold a special place in many gardens. These vibrant and delicious vegetables are fun to grow and can also be decorative. Just because you don't have a garden to grow peppers doesn't mean that you can't grow them. Growing peppers in planters is easy. Plus, when you grow peppers in pots, they can double as decorative plants on your patio or balcony.

Growing Peppers in Containers: Container garden peppers need two important things: water and light. These two things will determine where you will grow pepper plants in a container. First, your peppers will need five or more hours of direct sunlight. The more light they can get, the better they will grow. Second, your pepper plant is entirely dependent on you for water, so make sure that your container growing pepper plant is located somewhere that you will be able to easily get water to it on a daily basis.

Planting Peppers: When planting your pepper plant into the container, use organic, rich potting soil; don't use regular garden soil. Regular garden soil can compact and harm the roots while potting soil will stay aerated, giving the roots room to grow well. As mentioned, a pepper plant will need to get nearly all of its water from you. Because the roots of a pepper plant cannot spread out into the soil to look for water (like they would if they were in the ground), it needs to be

watered frequently. You can expect to water your pepper plant in a container at least once a day when the temperature is above 65 F. (18C.) and twice a day when the temperatures rise above 80 F. (27 C.)

Pollinating Pepper Plants: Pepper plants are self-pollinating, so they don't technically need pollinators to help them set fruit, but pollinators can help the plant set more fruit than it normally would. If you're growing peppers in planters in a location that could be difficult for bees and other pollinators to get to, like a high balcony or an enclosed porch, you may want to try hand pollinating your pepper plants. This can be done one of two ways. First, you can give each pepper plant a gentle shake a few times a day while it is in bloom. This helps the pollen distribute itself to the plant. The other is to use a small paint brush and swirl it inside each open blossom. Container garden peppers can be fertilized with compost tea or a slow release fertilizer once a month. Growing peppers in containers can be fun and makes these tasty vegetables available to many gardeners who don't have a traditional, in-the-ground garden.

6. Growing Onions in Container Gardens

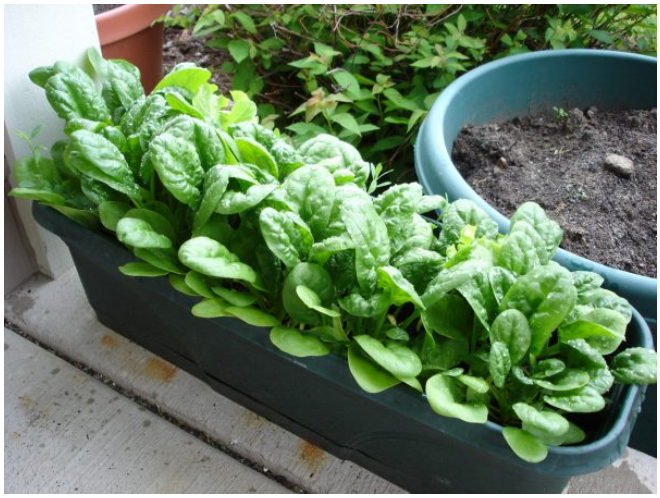
Many people would love to grow onions, but due to a small garden or perhaps no garden at all, they just don't have the space. There is a solution though; they can try growing onions in container gardens. Growing onions in containers allows you to be growing onions indoors or in a small space in your backyard.

Choose the Right Container: The way to grow onions in container gardens is much like growing onions in the ground. You need good soil, adequate drainage, good fertilizer and plenty of light. Really, the only difference between what you do when you grow onions in the ground and when you grow onions in pots is choosing the container you'll be growing them in. Because you need several onions planted to get a decent crop, attempting to grow onions in pots that are only 5 or 6 inches wide would be cumbersome. If you choose to grow onions in pots, choose a large mouthed pot. It needs to be at least 10 inches deep. Many people have success growing onions in a tub. Because plastic tubs are much cheaper than a comparable sized pot, growing onions in a tub is economical and efficient. Just make sure that you put holes in the bottom of the tub to provide drainage. You can also grow onions in 5-gallon buckets but realize that you may only be able to grow 3 or 4 onions per bucket as onions need at least 3 inches open soil around them to grow properly.

Choosing a Location for Growing Onions in Containers: Whether you decide to grow onions in a tub or in pots, it's essential that you put the onion container somewhere that gets six to seven hours of light. If you are growing indoor onions and don't have a location with adequate sunlight, you can supplement the light with fluorescent bulbs set close to the onions. A shop light on an adjustable chain makes an excellent grow light for people who growing indoor onions.

Remember to Water Your Potted Onions: Water is an important to growing onions in container gardens because your container onions will have little access to naturally stored rainfall from surrounding soil like onions grown in the ground do. Onions grown in containers will need at least 2 – 3 inches of water a week, perhaps even more in hot weather. Check your onions daily, and if the top of the soil is dry to the touch, give them some water. Just because you have limited space doesn't mean that you need to limit what you grow. Growing indoor onions or growing onions in a tub on the patio is fun and easy.

7. Growing Spinach



When it comes to vegetable gardening, spinach planting is a great addition. Spinach (Spinacia oleracea) is a wonderful source of Vitamin A and one of the healthiest sources minerals and nutrients that we can grow. When you think about how to grow spinach, think about which kind you'd like to grow. There is crinkled leaf spinach, plain leaf spinach and savoy spinach. All are wonderful in their own way.

How to Plant Spinach: One of the best tips for growing spinach is that it prefers loose, well-draining soil and will thrive in both sun and shade conditions. Spinach planting is done by planting the seeds ½ inch deep. Plant about 12 to 15 seeds per foot of row to ensure plenty of spinach growth. Once your plants are at least an inch (2.5 cm.) or so tall, start thinning to about 2-4 inches (5-10 cm.) apart. Also, make sure your rows are only 12 inches (30 cm.) apart, which keeps weeds down to a minimum. Succession planting is a great method for growing spinach, planting every couple to every few weeks. This will yield fresh spinach consistently all year long.

Harvesting or Picking Spinach: It really doesn't take long for your spinach to fill out your containers, much like lettuce. Once you see five or six good leaves on a plant, go ahead and begin picking them. Fresh spinach is great mixed with lettuce in a salad or by itself in a spinach salad. You can wait until you have enough and cook them down as well. If you planted your spinach as suggested, you'll be picking spinach all year long.

8. How to Grow Rosemary Indoors

Growing rosemary indoors is sometimes a tricky thing to do. Many good gardeners have tried, and despite their best efforts, end up with a dry, brown, dead rosemary plant. If you know the secrets to proper care of rosemary plants growing inside, you can keep your rosemary plants growing happily indoors all winter long.

Most often, there are four things on the list of what kills rosemary plants indoors. These are: lack of sunlight, poor watering practices, powdery mildew, and pests. If you can avoid these issues, your rosemary plant will live happily inside. Let's look at how to avoid each.

Lack of Sunlight: Most people aren't aware that the lack of sunshine is the most common reason for a rosemary plant growing indoors to die. Often, rosemary plants are brought indoors without any acclimation. They go from six to eight hours of strong, direct light to four to six hours of weak or indirect light. The rosemary plant is unable to produce enough energy to stay alive on this amount of weak light and simply dies. The first step to preventing rosemary light starvation is to put your rosemary on a sunlight diet before you bring it indoors. Several weeks before you plan on bringing the rosemary inside, move the plant to gradually shadier areas of your yard. This will force the rosemary plant to grow leaves that are more efficient at turning light into energy, which will help it cope with weaker indoor light when it moves inside. Once your rosemary moves indoors, make sure that you place it in the brightest window in your house, which is normally a south facing window. If your rosemary plant is not getting at least six to eight hours of light a day, place a lamp with a fluorescent light bulb as close as possible to the plant to supplement the sunlight.

Poor Watering Practices: The second most common reason for an indoor rosemary dying is watering practices. Often, indoor rosemary plants are watered too little or too much. Make sure that the drainage on the container with the rosemary is excellent. Only water the soil when the top of the soil is dry to the touch. But that being said, never let the soil dry out completely. In the winter, rosemary plants grow much more slowly and need much less water than they do in the summer. Watering too often will cause root rot, which will kill the plant. On the other side, if the soil of the rosemary plant is allowed to dry out completely, the roots will die back, and the plant will not have enough roots to support itself.

Powdery Mildew: Indoors or outdoors, rosemary plants are very susceptible to powdery mildew. Most homes don't have the same air circulation as the outside world does, which makes this an even worse problem for the plant inside. The best way to drive away powdery mildew on rosemary plants is to increase the air circulation around it. Letting a fan blow on it for a few hours a day or taking it out of more high humidity rooms like the bathroom or kitchen, will help improve the air circulation. You can also treat the plant with a fungicide to help keep away the powdery mildew.

Pests: To be honest, while pests may get the blame for killing a rosemary plant, most pests will only infest a plant that is already weakened. Unfortunately, most rosemary growing indoors, despite all best efforts, are growing in a somewhat weakened state. The stricter you are with yourself about making sure that your rosemary plant is watered properly and gets enough light, the less likely pests will bother the plant. But, if your rosemary is infected with pests, use a houseplant pesticide to remove them. Since rosemary is an herb and it is mainly grown to be eaten, look for organic pesticides. One that is growing in popularity is neem oil, as it is very effective against pests but is completely harmless to humans and pets.

9. How to Grow Chives Indoors

Growing chives indoors make perfect sense so that you may have them near the kitchen. Use chives liberally in dishes; chives growing indoors will benefit from a regular trim. Keep reading to learn more about how to grow chives indoors.

How to Grow Chives Indoors: A sunny south window offers the six to eight hours of full sunlight needed when growing chives inside. Rotate pots if chives are reaching toward the light. If a sunny window is not an option, chives growing indoors can get the necessary light from a fluorescent fixture six to twelve inches above the pot. Two 40-watt bulbs work best when growing chives inside. Chives growing indoors appreciate other growing pots close by to provide humidity as well as a fan for air circulation.

Maintaining Indoor Chives: Humidity for indoor chives may be provided by nearby pebble trays filled with water or miniature water features nearby. Misting with a water bottle can also help prevent low humidity. Chives growing inside should be watered when the soil is dry to the touch on the top. Low dose fertilization is recommended for growing chives indoors. A water-soluble fertilizer at half strength may be applied twice per month; heavier doses may weaken the taste of the chives. When growing chives indoors, pests should be minimal. Often the aroma of chives acts at a pest repellent, but in the event of insect problems, spray well with soapy water. This can be applied as needed.

Tips for Planting Chives Indoors: To begin growing chives indoors, fill a 6-inch clay pot with well-draining potting medium which you have pre-moistened. Soil should form a ball when squeezed, but not be soggy or dripping water. Broadcast seeds over the pre-moistened medium and cover with a fine layer of the pre-moistened soil, about ¼ inch deep. Place in the lighted area. Seeds may be kept moist until germination with a mist of water, weak plant food or weak compost tea. Chives germinate within two weeks, often more quickly. Growing chives indoors offers a handy and easy way to season your food and brighten your space.

10. How to Grow Cilantro Indoors

Growing cilantro indoors can be as successful and flavorful as growing cilantro in your garden if you give the plant a little extra care. When planting cilantro indoors, it's best not to transplant plants from your garden. Cilantro does not transplant well. When you grow cilantro indoors, start with seeds or starter plants. Ultimately, make sure that your plants are 3 to 4 inches apart.

Tips for Growing Cilantro Indoors: It's best to use an unglazed terra cotta container when growing cilantro inside because it allows for greater moisture and air to pass through the roots. Make sure that you have plenty of drainage holes in the bottom of the container. Cilantro growing indoors needs more nutrition because the root system range is limited and can't access as much soil for nutrients as it would in your garden. The soil when planting cilantro indoors should be a mixture of potting soil and sand to allow water to move freely. In addition, you can use a fertilizer of liquid fish emulsion or chemical formulation of 20-20-20 to add additional nutrients. Use half concentrations of the fertilizers bi-weekly during the active growing periods. Thorough watering is more important than frequent watering when growing cilantro inside. Water the plants until the water comes out the drainage holes. Check the soil frequently, but cilantro growing indoors should only be watered when the soil is dry to the touch. This will be more often in the summer months. To grow cilantro indoors, it's important that the plant have full sun four to five hours per day. If you also use a growing light, growing the cilantro inside will be more successful.

Harvesting Cilantro Growing Indoors: When you grow cilantro indoors, it's important to harvest it with care. Indoor herbs naturally reach for the light and can, therefore, become spindly. Pinch them at the growing tips to force a bushier plant. Keep in mind when planting cilantro indoors that it will grow less abundantly than when grown outside in your garden. However, with added care and attention to sun exposure, soil mixture, moisture and gentle harvesting, you will be rewarded with this flavorful and aromatic herb year-round.

12. How to Grow Basil Indoors

While basil is a commonly grown herb outdoors, this easy-care plant can also be grown indoors. In fact, you can grow basil inside much the same as you would in the garden. This wonderfully fragrant herb can be grown for use in the kitchen, making aromatic oils, or simply for aesthetic purposes. Let's look at how to grow basil indoors.

Basil Growing In Containers: Growing basil indoors is easy. Container grown basil should be planted in well-drained, nutrient-rich soil. Using the proper soil type is important in order to successfully grow basil inside. As basil is not tolerant of water stress, make sure pots provide adequate drainage. While the soil should be kept somewhat moist, it should never be soggy; otherwise, the roots will be prone to rotting.

Nutrition for Indoor Basil: Basil growing indoors will require fertilizing. Depending on the variety grown and its overall purpose, a general houseplant fertilizer can be used. As with many houseplant fertilizers, this should be used at half the recommended strength. However, basil used solely for flavoring foods requires the use of an organic fertilizer. Organic fertilizer also helps to maintain pH levels when growing basil indoors. Healthy pH levels are another important aspect of

quality soil. You should check the pH levels of soil about once a month or every four to six weeks for optimal growth. Sufficient pH levels are usually between 6.0 and 7.5.

Best Lighting to Grow Basil Inside: Additionally, when growing basil indoors, lighting is important. Basil growing indoors requires at least six hours of sunlight. Basil plants should be placed in a sunny window, preferably facing south. Otherwise, these potted plants may need to be grown under fluorescent lights. With this type of lighting, basil plants will need about 10 hours of light for healthy growth. However, basil grown indoors can also be given both sun and artificial lighting by alternating so many hours in each. While growing basil indoors is an easy endeavor, the vigorous growth of plants may require frequent repotting. If you follow these few easy tips on how to grow basil indoors, you will be rewarded with this delicious herb year-round.

13. How to Grow Parsley Indoors

Growing parsley indoors on a sunny windowsill is ornamental as well as practical. Curly types have lacy, frilly foliage that looks great in any setting and flat-leaf varieties are prized for their flavor. Learning how to grow parsley indoors is not at all complicated and neither is indoor parsley care.

Parsley Container Light Requirements: Parsley herbs (Petroselinum crispum) grow best in a sunny, preferably south-facing window where they will receive six to eight hours of direct sunlight every day. If your window doesn't provide that much light, you'll have to supplement it with fluorescent lighting. Turn the pot every three or four days so that the plant doesn't lean into the sun.

Ideal Conditions for Parsley: Parsley container gardening is no different than growing any other potted herbs. Choose a container that fits snuggly on the windowsill. It should have several drainage holes and a saucer underneath to catch water as it drains through. Fill the pot with a good quality potting soil and add a handful of clean sand to improve the drainage. Humidity isn't usually a problem when you grow parsley in the kitchen where steam from cooking and the frequent use of water helps keep the air moist. In other locations, you may need to mist the plants from time to time. If the leaves look dry and brittle, set the plant on top of a tray of pebbles and add water to the tray, leaving the tops of the pebbles exposed. As the water evaporates, it increases the humidity of the air around the plant.

How to Plant Parsley Indoors: When you're ready for growing parsley indoors, it's best to start parsley from seeds sown directly in the container because parsley has a long tap root that doesn't transplant well. Sprinkle a few seeds on the surface of the soil and cover them with an additional 1/4 inch of soil. Water the pot regularly to keep the soil moist to the touch but not soggy and expect seedlings to emerge in three weeks or so. If you get too many seedlings, you'll have to thin them out. Clip out the excess with scissors or pinch them out between your fingernail and thumb. Pulling them out may damage the tap roots of the surrounding plants.

Indoor Parsley Care: Indoor parsley care is easy. Keep the soil lightly moist and empty the saucer under the pot after every watering so that the roots don't sit in water. Feed the plants every two weeks with fish emulsion or half-strength liquid fertilizer. You can grow other herbs in the container with parsley, if desired. Herbs that combine well in a mixed container with parsley include chives, thyme, basil, oregano and mint. When planting thyme with parsley herbs, stick them around the edges of a container or hanging basket where it can tumble over the edges.

14. How to Grow Oregano Indoors

Oregano (Origanum vulgare) is a heat-loving, pungent herb that is found in Mediterranean and Mexican cooking. Growing oregano indoors is an excellent way to bring those flavors to your food. If you are a dedicated cook, a display of fresh growing herbs near to hand enhances your dishes and enlivens recipes. Planting oregano indoors can be done alone or in a trough with other like-minded herbs.

Planting Oregano Indoors: Indoor oregano plants need similar conditions to exterior raised plants. The ideal temperatures for growing oregano inside are between 65 -70 F. (18-21 C.) in the day and 55-60 F. (13-16 C.) degrees at night. The container should have excellent drainage. The oregano can be planted in equal parts potting soil, sand, peat moss and perlite. When you plant the oregano, make certain only the root ball is buried and the main stems are not immersed in soil or they may rot. Place your potted oregano in bright light. Oregano can be moved outdoors in summer if you wish but remember to bring it back in before temperatures change drastically or you may shock and kill it. Oregano grown in containers will have a harder time surviving cold weather than oregano grown in the ground.

Care Tips for Oregano Indoors: Oregano is an easy to care for plant that requires at least six to eight hours of sun. A bright southern exposure window is perfect, or you can use a plant light. Place the herbs no closer than 5 or 6 inches but no less than 15 inches away from an artificial light source. Oregano needs to have the soil dry out a bit in between watering and benefits from frequent haircuts to keep the plant compact and producing leaves. Fertilize the oregano every two weeks with a diluted water-soluble food every two weeks. Herbs are so easy to care for that only a few items need to be remembered when learning how to grow oregano indoors.

Companion Herbs for Indoor Oregano: Growing oregano inside as a part of an herb display allows the cook to have a variety of fresh herbs available. The types of herbs planted with oregano should require the same culture and exposure. Bay, marjoram, sage and thyme have similar water and sun requirements and can be added to containers when growing oregano indoors. Any herb that likes bright light, medium water and has a moderate growth rate would make a good companion plant for oregano growing indoors. Keep any of the herbs from flowering, which reduces the life of the plant.

INDOOR WINDOWSILL (CONTAINER) GARDENING ADVICE AND TIPS

(Compiled from www.gardeningknowhow.com)

- ***Plants*** – You can start plants from seeds or cuttings, or you can purchase plants. Many classrooms begin their gardens with seeds because they are relatively inexpensive, and students get to see firsthand the life cycle of plants. Local garden centers and seed companies are often willing to donate seeds to schools – by the end of the summer many companies want to get rid of excess stock. (Seed is dated when packaged, and most businesses will not sell seed with expired dates. But as long as they have stored seed properly, seeds will germinate well even if they are several years old.)
- ***Containers*** – You can use just about anything for a plant container as long as it has drainage holes, so water doesn't pool around roots. Plastic pots are the most common containers because they are generally inexpensive, can be reused, and are lightweight. Clay and peat pots are other common options. You can also use recycled containers as plant pots. School milk cartons, plastic yogurt cups, egg cartons, and plastic soda bottle bottoms are all possibilities. Whatever receptacle you choose for your windowsill garden, be sure that water can drain away from the plants. Punch or drill holes in the bottom and place a plate underneath the receptacle or place pebbles in the bottom so water will drain through them and away from the roots. How will water that drains out of the containers be captured and not cause damage to the windowsill, furniture, books, and other surfaces?
- ***Growing Medium*** – The growing medium in which you raise your plants is important. It anchors the roots so the plants don't fall over and serves as a reservoir for water, air, and nutrients taken up by the roots. The best medium to use in pots is soilless potting mix, made from peat moss (or coco peat), vermiculite, and/or perlite. Some mixes also contain added nutrients in the form of slow-release fertilizer or mineral amendments. Soilless potting mix is light enough to allow for good water drainage, root aeration, and root movement, yet heavy and spongy enough to anchorage and to hold adequate water and nutrients. It's easy to transport and readily available in most garden stores. Most are sterilized so that they do not contain weed seeds, insects, or diseases that could flourish in the favorable conditions of an indoor garden. When sprouting seeds, use a lightweight seed-starting mix. When filling a container for growing lettuces and/or herbs, a richer potting mix is most suitable.
- ***Location*** – Determine which direction the windowsill is facing. The windowsill garden will need at least 6 hours of sunlight on most days. In the Northern Hemisphere, windowsill gardens facing north will generally not get quite enough light to grow healthy plants from seed. However, other shade-tolerant indoor plants will do fine if properly cared for. East-facing and west-facing windowsills are the best bet, as they tend to receive the right amount of direct sun. Windowsills that face directly to the south can flourish, but they must be monitored carefully since the light may be too intense and the soil in the containers may dry out quickly.
- ***Light*** - The shorter days of winter do not often provide the required 6 to 8 hours of sun for vegetables, so you will need to use a supplemental light source that provides full UV spectrum light, in addition to placing your window box veggie garden in a southern- or eastern-facing window. A southern exposure is best, but as with other foods to grow on a windowsill, a grow light can help make up for any lack in lighting.
- ***Moisture -*** Containers require watering more often than crops in the ground. If your home is particularly dry, you may need to provide some humidity in the form of a tray with pebbles and water or by misting plants on a frequent basis. Locate your window box veggie garden where it will not be subject to a draft or the dry air from a heat vent, and keep your box evenly moist.
- ***Additional Supplies*** – You may need plant labels (popsicle sticks and plastic silverware work great), watering cans (try plastic water bottles or milk jugs) and fertilizer (liquid or slow-release). Since there are no bees indoors to pollinate growing plants in windowsills, you will have to hand pollinate the plants using a small paintbrush to transfer the pollen from one plant to another if needed. Watch for insects that may find a home in your window box herb garden. A mixture of dish soap and water sprayed liberally on the plants should minimize most pest invasions.

Appendix B Hydroponic Tower Resources:

The Information in this Appendix was adapted from various online resources listed below.

https://uponics.com/hydroponic-tower/

https://rootstoharvest.towergarden.ca/grow

Hydroponic/Aeroponic Grow Towers

The intention of this appendix is to provide details on how and what to grow in your tower garden and offers general maintenance and tips for successful growing. See Appendix D for links to lesson plans related to hydroponic tower gardening. The majority of the information in this appendix is sourced from Roots to Harvest and Tower Garden® by Juice Plus+.

Vertical Hydroponics

Hydroponics is a method of growing plants without soil in a horizontal or vertical fashion, where mineral nutrients are provided through the water.

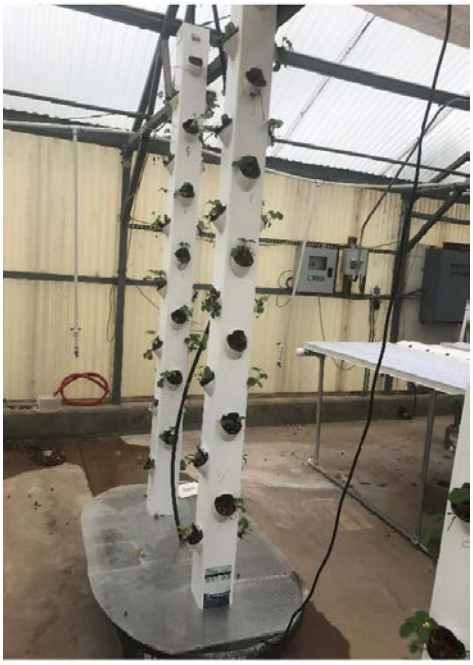


Figure 7: Verticle Hydroponic Tower holding 56 Plants

B. Notes Before You Begin Your Garden

The following tips are adapted from https://uponics.com/hydroponic-tower/.

Once the tower is up and running, it becomes very easy to maintain. However, there are a few considerations before you start growing your vertical garden.

- Light – As with all gardening, plants need a lot of sunlight to thrive. Generally, plants do well with 10-12 hours of sunlight per day. While an unobstructed window with southern exposure may suffice, supplemental light is often needed.
- Temperature – Stable temperatures for growing hydroponics are required. 60-80 degree ranges work for most plants, grown in hydroponic towers.
- Nutrients – A good nutrient solution is essential to successful hydroponics. While some vertical towers already include nutrients with purchase of the vertical hydroponic tower, others do not. (for example, General Hydroponics – Flora Bloom Fertilizer)
- pH adjusters – Different plants may require different pH levels, so pH adjusters (liquid chemicals you can purchase) are often necessary for controlling acid levels within the grow tower (for example, General Hydroponics – 1415 Control Kit)
- Grow mediums – While the nutrient solution provides the nourishment in hydroponic grow towers, grow mediums act as a support for the plant and its root system, while also providing aeration and drainage. Some vertical grow system include grow mediums with purchase of the kit, while others do not. See our hydroponic grow mediums page.
- Air-flow – Indoor grow towers may benefit from oscillating fans, or ceiling fans, as they are helpful in maintaining good air-flow surrounding your plants and their root system. You can also place your hydroponic tower near an open window to allow air flow. Advanced vertical towers often have oxygenating features within their hydration systems, which help provide oxygen in the root system.

C. Recommended Plants to Grow in Your Garden Tower

Here is list of the top 10 plants that will grow well in any model of vertical tower garden. Detailed growing guides, which include tips for starting seeds, dealing with pests and handling plant disease issues, for each of these plants is available at: https://rootstoharvest.towergarden.ca/grow

Swiss Chard

Swiss chard grows well from spring through fall. When starting Swiss chard, plant about 4 seeds per rock wool cube. Seeds should germinate within 1–2 weeks. And seedlings should be ready to transplant 2–3 weeks after sprouting. Because Swiss chard grows tall, we recommend planting it in the top section of your Tower Garden. Swiss chard leaves make a convincing spinach substitute, as the stalks do for asparagus or celery. The healthy green is delicious simply sautéed with lemon juice and sprinkled with Parmesan cheese. If you harvest more than you can eat right away, rinsed and bagged Swiss chard will last about 4 days in the refrigerator. Alternatively, blanch and freeze or even dry excess produce.

Cucumbers

Crisp, juicy, delicately flavored cucumbers are one of the joys of summertime. Cucumbers are ideal for the beginning gardener because with just a little work, a bumper crop of cukes is yours for the picking.

Cucumbers grow vigorously under the right conditions. They love warm weather, and have an optimal growing temperature of 75-85 degrees.

Where you place your cucumbers within your Tower Garden® will be important due to their vining nature. We suggest placing the plant(s) in the lower tier(s) of your Tower Garden®. This will allow the vines to spill over onto the ground surface. You can also train the vines onto the support cage and let them fountain over the sides.

Just be aware that cucumber tendrils will wrap themselves around anything. You may want to train the vines to grow along deck balustrades, fences or your Tower Garden® cage. It's easy to get semi-curled tendrils to attach to a surface — gently take the tendrils and begin wrapping them onto the desired surface. They will quickly establish a hold. Don't be afraid to train the plant where you want it to grow!

Kale

Like most members of the Brassica family, kale grows best as a cool season crop. Depending on the variety and growing conditions, your kale may be ready to harvest in as little as one month's time. When harvesting your kale, pick the bottommost leaves first, allowing at least 3–4 leaves to remain and keep growing. You should harvest often, as this will encourage continued growth (which ultimately means greater yields). Prune dead or diseased leaves as needed. You can use kale much like you would spinach or another green. Smaller tender leaves are perfect for quick salads. But bigger leaves are best when cooked.

Lettuce

Lettuce is one of the most popular hydroponic vegetables for good reasons:

- Fast-growing, and can be ready to harvest in as little as 3 weeks.
- Easy to grow—a perfect choice for new gardeners.

If you want fresh lettuce every day for salads or other dishes, we suggest growing approximately 2-3 heads of lettuce per person. Of the many varieties of leaf and head lettuce, most prefer full sun and temperatures between 45–80˚, making lettuce a good cool season crop. Lettuce can withstand light frosts. But in hot weather, it will easily bolt (i.e., quickly grow vertically, flower and produce seeds)—and this process typically makes lettuce bitter. So if you grow lettuce in warmer conditions, plant it in partial shade or grow heat-tolerant varieties.

For leaf lettuces, plant 2–4 seeds per rock wool cube. And for head lettuces, plant only 1 seed per cube. Lettuce seeds usually germinate within 1–2 weeks. And seedlings should be ready to transplant to your Tower Garden 10–14 days after sprouting, or whenever they have at least 2–3 leaves and a visible root structure. When transplanting, keep in mind that lettuce is a good crop to plant near the top of your Tower Garden. Since they grow so quickly, lettuces will be ready to harvest within a few weeks after planting. You may wish to harvest the whole head, or by individual leaf if you want to grow more from the same root ball.

Peppers

Peppers are enjoyed worldwide— raw, sliced peppers are a crunchy, healthy treat served on their own or with a dip. Or you can dice them and toss them on pizza. Peppers are good for you, too! Depending on the variety, they are rich in carotene, lycopene, vitamin C and other antioxidants.

Like tomatoes, peppers absolutely love the sun/heat. Their growth can slow down if temperatures in the grow tower dip below 55° on any given day, and it might take a few days afterward for them to start growing normally again. When can you start enjoying stuffed peppers? In general, you can transplant peppers 3–4 weeks after germination (sprouting). Sweet and mildly hot peppers should be ready to harvest in another 6–8 weeks, while you can expect a long wait of 9–10 weeks for the hot pepper varieties.

Squash

Squash grow quickly and produce furiously. Squash come in many shapes in sizes. But there are two main types:

- **Summer squash**, including zucchini and yellow varieties, are often distinguished by bushy (rather than vining) growth.
- **Winter squash**, such as acorn and butternut, are typically vining plants that require more space and time to grow. But they produce fruit with tougher skins, which allows you to store harvests much longer than you can summer varieties.

When growing squash in your tower garden, start by planting no more than 2 seeds per rock wool cube. Once they sprout, place seedlings outside in the sun for 3–4 weeks before transplanting to your Tower Garden. Since both summer and winter varieties grow quite large, we recommend planting squash in the bottom section of your Tower Garden. Be sure to monitor water levels as your plants grow, as squash are heavy feeders.

To encourage healthy, more manageable growth, consider supporting plants with a tomato cage or similar structure. You should also prune your plants occasionally to improve air circulation. This will help prevent powdery mildew and other common squash diseases. Squash are notorious for needing help with pollination. If your plants produce flowers but no fruit, or if your squash shrivel and die before growing large enough to harvest, try hand pollinating.

Most summer squash varieties will be ready to harvest about 60 days after planting. To harvest, simply cut fruits from the vine once they are 6–8 inches long. If you wait much longer, they will become less tender and flavorful.

Winter squash are a little different. When the rind of a fruit is hard enough to resist being punctured with a fingernail, it's ready to harvest. You can usually store winter squash in a cool, dark place for up to 6 months.

Strawberries

Strawberries surge with Vitamin C, antioxidants and other healthful things. Strawberries are relatively cold hardy, so you can start early in the year—as soon as temperatures consistently stay above 35˚F. A few varieties may be grown successfully from seed. But in most cases, you'll save yourself about three years of waiting on fruit if you purchase seedlings.

When placing your strawberry plant in the rockwool cube, position the crown of the plant (which is just at the base of the main stem) slightly above the surface. Since new leaves and flowers grow from the crown, it needs access to light and air. Otherwise it will rot, and the plant will die.

Once you've planted your strawberries, there are a few other important checklist items—namely pruning the first buds, hand-pollinating flowers and removing runners.

Prune strawberry buds
Removing the first set of buds on your strawberry plant results in a more vigorous plant (and a heartier harvest later on). This is because pinching or snipping off these initial buds encourages your plant to focus on root and leaf development.

Hand-pollinate flowers (if necessary)
If your plants produce flowers but no fruit, you must "be the bee." In other words, you'll need to hand-pollinate. The process is simple: just take a small paintbrush or cotton swab and brush the inside of each flower to transfer the pollen. If successful, you should see signs of berries in a few days.

Remove (and root) strawberry runners
Many strawberry varieties produce runners, which are sprawling, root-like offshoots. Runners help soil-grown strawberry plants expand their footprint and collect more resources. If you cut the runners, it has the opposite effect of pruning—it tells your plant to focus on fruit production, resulting in bigger harvests.

You should enjoy your harvests as soon as possible, because the natural sugar in strawberries converts to starch soon after the fruit it picked. (That's one reason store-bought berries usually aren't as good as homegrown.) Strawberries make sweet additions to salads, delectable toppings on desserts and satisfying, simple snacks.

Tomatoes

Tomatoes are incredibly good for you, containing vitamins A and C, folic acid, lycopene and much more. Research shows eating tomatoes can lead to healthier skin and a stronger heart health.

Tomatoes come in different sizes, shapes, colors and flavors. Some are better for certain uses. For example, when it comes to salads, you can't beat cherry tomatoes. But if you intend to slice tomatoes for sandwiches, beefsteak is best. And Roma tomatoes are the variety most commonly used for cooking.

When selecting which kind of tomatoes to grow, think about what you will use the tomatoes for. Also be sure to consider which growing type you prefer: indeterminate or determinate.

- **Indeterminate tomatoes** require the most maintenance, as they keep growing as long as the season allows. You must prune these plants regularly so they don't overtake your garden or get too leggy and weak to hold the fruit they produce. Indeterminates also need the support of a tomato cage or similar structure. Though they require more work, indeterminate varieties are prolific (and, some might argue, the best tasting).
- **Determinate tomatoes** grow in a bush-like fashion and, unlike indeterminates, have a "determined" size. Once they reach it, they stop growing. Determinate varieties may need a tomato cage and light pruning, but only for purposes of strengthening or containing the plant.

When starting tomatoes, plant about 2 seeds per rock wool cube. Seeds should germinate within 1–2 weeks. After this happens, cut and remove the weakest seedlings in each cube. The remaining seedlings should be ready to transplant 3–5 weeks after sprouting. Tomatoes grow large and heavy, so we recommend planting them in the bottom section of your Tower Garden.

Fruit will mature in the order it appears on the truss (i.e., the fruit closest to the stem will ripen first). For most varieties, a tomato is ready to pick when it turns a deep red color, becomes slightly soft (but not mushy) to the touch, and easily "pops" off the truss.

Appendix C Sample Curriculum for Harvest to Table Classes

Note: all Lesson Plan materials and recipes provided in this appendix have been adapted from Roots to Harvest (Forest Meets Farm) education resources.

Additional recipes and materials are available at:

- Forest Meets Farm Resources (Roots to Harvest): http://www.rootstoharvest.org/forest-meets-farm.html
  - Includes free webinars and teacher toolkit
- Food Share's Resources - How to Guides: https://foodshare.net/resources/printable/
  - Long list of lesson plans and How To guides available for download

Below is a sample of a lesson plan and a couple of recipes offered by Roots to Harvest. You can find more online at the above address or contact:

Kim McGibbon, Program Coordinator
Roots to Harvest
Email Kim@rootstoharvest.org
Phone 807-285-0189

Course 1: Wild Cooking - Foraging and Cooking Local Wild Edibles

- These recipes are designed to promote wild foraging in your area
- Recipes are suggestions only based on what you can harvest in your area but you can also use store bought dried products if wild ingredients are not available
- This lesson plan and recipes can be prepared at home, in a school or using a shared community kitchen if one is available

Lesson Plan 1. Forest Meets Farm Curriculum - Foraging

Theme: Foraging
Topic Exploring the origins and handing of wild foraged foods from the boreal forest.
Intro Activity Introductions: Students give their name and a food that can be sourced locally, either wild or farmed. The foods listed by the students are written on the board for the class to see, time is given for students to name anything not listed during introductions.
Theory The history and process of gathering food from the forest. i.e. teas, berries, fiddleheads, spruce tips, rice and mushrooms. Main focus of discussion on wild mushroom and wild rice harvesting.

Learning Activities **Prepare some foraged foods -** rehydrate wild mushrooms, cook wild rice, create a wild rice casserole **Taste test some of the foods from the forest -** berries, mushrooms, fiddleheads, wild rice, spruce tips **Tea tasting –** bring in various teas for the students to taste (Labrador, mint, cedar, rose hip, chamomile etc.) **Take a field trip to forage some foods** – have a local expert guide your group in a foraging expedition. Collect what is ready during that time of year.
Local Resources Mushroom Forager: Jamie Rickards Wild Rice Harvester: Rhonda LeClair of Anishinaabe Wild Rice Experience
Final Activity **Reflection –** Head, Hand, Heart. What knowledge was gained about foraged foods, what skill were gained related to foraged foods, what were your feelings about the lesson. Finish day with: Introduce next module and outline date with teacher and students
Evaluation Record the number of students in class as well as the types of local food discussed and prepared.

Class #1: Wild Boreal Mushroom Soup

Wild Boreal Mushroom Soup

This recipe is creamy but not thick, and the slight hint of lemon keeps every rich spoonful fresh and snappy. Feel free to try out different types of mushrooms, and if you're making this when there are no wild ones available, then just use what you can find at your market or grocery store!

Serving Size | 6 Servings

6 tbsp salted butter
1 1/2 c diced onion
1/4 c morel mushrooms
1/4 c chanterelle mushrooms
1/4 c bolete mushrooms
1/4 c yellow foot chanterelle
(OR 1 cup fresh or rehydrated wild mushrooms available)
1 c cremini mushrooms
4 tbsp sifted whole wheat flour
1/2 tbsp paprika
1 c whole milk
3 c vegetable stock
3 tbsp soy sauce
1 c plain yoghurt
1 tbsp lemon juice
2 tbsp fresh dill finely chopped (or 1 tbsp dried)
1/4 c chopped fresh parsley
salt and pepper

Figure 8: Wild Mushroom Soup

- Melt butter in a large pot over medium heat.
- Add onions, wild and cremini mushrooms and sauté until mushrooms have released the water content; about 10 minutes.
- Add flour and paprika to the sauté, stirring to work out any lumps. Cook for a minute or two.
- Add milk in increments, again working out any lumps. Add vegetable stock and soy sauce, and bring to a gentle boil. Reduce heat and simmer for 10 minutes.
- Remove from heat and mix in yoghurt, lemon juice, dill, and parsley. Season to taste with salt and pepper.

Class #2: Spruce Tip Tart Shells & Wild Blueberry Filling

Spruce Tip Tart Shells

Why should the filling get all the attention? Spruce naturally adds a slight citrus flavour to anything you use it with, so try these with the wild blueberry tarts or delicata squash tarts but don't be afraid to also try with a meat filling or even a small quiche.

Serving Size | 12servings

2½ c sifted flour
½ c sugar
¼ tsp spruce tip salt 1 c butter
¼ c ice water

- In a large bowl, combine flour, sugar and Spruce tip salt.
- Combine the butter and the flour mixture with a food processor or pastry blender until it resembles thick wet sand. Add ice water and work until dough begins to form.

- Turn the mixture onto a well-floured work surface. Knead into a ball of dough, wrap in plastic and chill for 30 minutes. Preheat the oven to 375F.
- Unwrap dough onto well-floured surface and divide into 12 portions. Roll each into a 3-inch circle approximately ½-inch thick. Gently place each circle of dough into greased muffin tins.
- Bake for 10-12 minutes or until slightly golden. Let cool completely before filling.

Adding spruce tip salt to this dough adds a subtle citrus and slightly bitter flavour to the crust – perfect for our lemony wild blueberry or sweet delicata pie filling.

Wild Blueberry Tart Filling

Blueberries speak for themselves, so we've kept this one simple and every bite is just a pure blueberry filled bite of joy. In the classrooms, we can tell who loves blueberries because even before we've cooked the tarts the tell-tale stains of blueberries on students' fingers is a giveaway to their indulgence!

Servings | 2 Dozen

2 c wild blueberries (fresh or frozen)
1 ½ tbsp lemon juice
1/3 c sugar
1/2 tbsp cornstarch
¼ tsp salt

- Preheat the oven to 350F and have the tart shells ready to be filled with this beautiful mixture.
- Put 1 cup of the wild blueberries and all of the lemon juice into a medium saucepan and bring to a simmer.
- In a small bowl, stir together the sugar, cornstarch and salt.
- Add dry mixture to the simmering pot and cook for a few minutes; until the berries burst and soften and the juices thicken.
- Remove from the heat and stir in the remaining 1 cup of wild blueberries.
- Spoon the mixture into the tart shells, piling them high.
- Put the filled tarts into the oven and bake for 10 minutes.

Appendix D: Additional Food Education Resources

Classroom Garden Tower Curriculum – The Good Food Machine

Available at: https://good-food-machine.thinkific.com/

- Course #1: Welcome to the Good Food Machine (6 lesson plans)
- Course #2: Assemble Your Tower Garden (7 lesson plans)
- Course #3: Manage and Troubleshoot your Tower Garden (4 lessons plans)
- *These courses are meant to be used with the Tower Garden system*

Adventures in Cooking – Thunder Bay District Health Unit Cooking Curriculum

Available at: https://www.tbdhu.com/sites/default/files/files/resource/2016-07/Adventures%20in%20Cooking%20Menu.pdf

- Lesson #1: Super Snacking
- Lesson #2: Veggies & Fruit
- Lesson #3: Brainy Breakfast
- Lesson #4: Cooking Lean
- Lesson #5: Final Feast
- Lesson #6: Breakfast Anytime
- Lesson #7: Colour It Up
- Lesson #8: Creative Culture
- Lesson #9: Super Soup 'n Sandwiches
- Lesson #10: Northern Feast

Farm to School "Garden Lesson Plan" Resources - Growing Minds

Available at: https://growing-minds.org/garden-lesson-plans/

Lesson Plans:

- Planting in the Garden
- Seed Tapes
- Watering the Garden
- Searching the Garden Safely
- Edible vs Non Edible
- Garden Alphabet
- Butterfly Life Cycle
- Harvesting in the Garden
- Root Exploration
- Stem Exploration
- Insect Exploration
- Making Garden Signs
- Soil Exploration
- Soil Amendments
- Garden Planning
- Literacy Beds

- Seasons on a Farm
- Soil Temperature
- Poetry in the Garden
- Seed Starting
- Worm Exploration
- Honey Bees

FoodShare - Educator Series

Available at: https://foodshare.net/program/educator/

Lesson Plans:

- Build a Worm Bin - "You Built It!" Series (Gr 4-6)
- Build a Bee Condo - "You Built It!" Series (Gr 4-6)
- Build a Pop Bottle Planter - "You Built It!" Series (Gr 4-6)
- Cook Off the Grid - "You Built It!" Series (Gr 4-6)
- Can You Dig It? (Gr 2-4) | Can You Dig It? Support Documents
- Food, Media & Marketing (Gr 5-12) - Supporting slides: Food Packaging and Advertising | Health Claims and Nutritional Information | Name That Brand. Name That Food. | Portion Distortion | You Sure You Want to Drink That?
- Pollination Patrol (Gr JK-2) | Pollination Patrol Supporting Documents
- Roots and Shoots (Gr JK-2) | Roots and Shoots Supporting Documents
- Stone Soup (Gr 2-4)
- What Toronto Eats (Gr 9-12) | What Toronto Eats Supporting Documents
- Cooking and Tasting Toolkit (Educator Manual Series)
- Great Big Crunch (JK/SK)
- Nourishing with Nursery Rhymes (JK/SK)
- Grains on the Brain (JK/SK - Gr 3)
- Herbalicious Poetry (Gr 3-6)
- Signature Salads (Gr 3-8)
- Cacao Culture (Gr 5) | Cacao Culture Name Tags | Cacao Culture Game Cards
- Eat Your Weeds (Gr 8-12)
- Signature Salads (Gr 9-12 Careers)
- Bike Blended Smoothies (Gr 12) | Smoothie Cards | Green Smoothie Recipe
- Herbalicious Poetry, Match-Up, Butter & Tea (Gr 5-6)
- You Know You Make Me Wanna Sprout! (Gr 7/8)
- EcoGardens Party (Gr 7/8)
- Grow to Your Room: Pop Bottle Planters (Gr 7/8) | Pop Bottle Building Instructions - drawings by Nicole Sullivan
- The Vegequarium (Gr 7/8)
- Eat Your Weeds Handout (Gr 8-12)
- Projects in Urban Agriculture (Gr 9) | File A Sprout Handout | Vegequarium Handout
- Compost - Three Bin Composter Building Guide
- Rotten Apple Party: Worm Exploration (JK/SK)
- Rotten Apple Party: Compost Game Show (Gr 1)
- Rotten Apple Party: Microorganism Dance Party! (Gr 2)
- Compost Cake (Gr 6) | Compost Cake Cards
- Soil Erosion (Gr 8)
- Food Source Sleuths: Royal Winter Fair (Gr 2-4)
- Waste in our Food System (Gr 3-8)

- Energy Detectives (Gr 6)
- FoodPrints and Energy Detectives (Gr 7) | Transport Hierarchy Signs
- Cattle and Land Use (Gr 7) | Cattle Cards | Super Cows | Roast Beef Sandwich Cards
- Time to Talk Turkey (Gr 8) | Time to Talk Turkey Poster | Food Item Cards
- Urban Chickens (Gr 8) | Chickens Field Guide

OTHER USEFUL DOCUMENTS:

- Back Pocket Activities to Keep Your Students Having Fun While They Learn (JK - Gr 8)
- Teacher Resource Book List (JK - Gr 12)
- Bicycle Blender Building Guide
- Greenbelt Farmers' Market Scavenger Hunts: Younger Children | Older Children
- Vegequarium Handout (JK - Gr 12)
- JK/SK Scavenger Hunt Worksheet
- Gr 1-3 Scavenger Hunt Worksheet
- Gr 4-6 Scavenger Hunt Worksheet
- Gr 7-8 Scavenger Hunt Worksheet
- Great Big Crunch Resources & Inspiration Page
- The Royal's High School Chef Competition Manual
- The Farm to School Salad Bar Toolkit

School Nutrition and Fitness – The Kids Cook Monday, Educator Toolkit

Available at: http://www.schoolnutritionandfitness.com/data/pdf/tkcm_educator_kit_lessons.pdf

- Lesson Plans included:
- Beans in My Belly – Family Activity
- The Mediterranean Diet with Greek Mezzz – Ages 4 -7
- Go! Fruits – Apple Pancakes – Ages 5 – 8
- Your Veggies, Your Way – Ages 5-8
- Eat Your Colors – Lettuce Wraps – Ages 6 – 13

Appendix E: Sample Budget for Food Education Programs

A fillable budget calculator has been created for each type of Food Education program discussed in the implementation guide: Windowsill Gardens, Hydroponic Grow Towers and Harvest to Table Classes. When you are ready to fill in your budget please contact your SLFNHA representative to gain access to this Excel file.

Note: The calculator is designed to update the Materials and Equipment costs only, based on the parameters you set (e.g. number of tower gardens, number of cooking class participants). Other resources in the budget will need to be customized to your community.

The following is a sample budget is based on the example parameters provided in the Implementation Guide. The Windowsill Budget is based on 5 homes or classrooms each hosting 4 windowsill boxes. The Tower Garden budget is based on 20 towers being installed and maintained by part time staff. The Harvest to Table Classes budget is based on 3 course topics with three cooking classes in each course and 10 students/participants. Most of the material and equipment costs were estimated using Sioux Lookout Home Hardware website to try and keep costs as local as possible, but occasionally outside resources were also used. This sample budget is fairly accurate as of June 2019, but should only be used as an example, as costs will change with time and by location. When creating your budget, make sure you verify all projected costs and wage rates for your community.

Sample costs for hiring an external trainer or facilitator are provided as an example only. Where possible, utilize local expertise in your community, which will be significantly more affordable.

Windowsill Garden Costs

(5 hosts, 4 window boxes each)

Description		Cost	Unit	Quantity	Total
1. Materials and Equipment					
A	Black window planter	$8.49	each	20	$169.80
B	Potting Soil (highly recommend finding source in community or creating with compost)	$27.99	3.8 cu.ft	3	$83.97
C	Seeds – number of seeds depend on size of planters	$3.00	pk	20	$60.00
D	Garden Gloves – for each participant	$8.00	each	5	$40.00
E	Watering Cans	$9.69	each	4	$38.76
F	Hand trowel	$7.49	each	4	$29.96
G	Jiffy Hydro Grow light (24W)	$55.00	each	5	$275.00
H	Seed Tray Starter Kit - 35 cells (you can also use many recycled materials to start seeds indoors, yogurt cups, egg cartons)	$11.99	each	4	$47.96
				Subtotal	**$745.45**
2. Community Resources					
2.1 Labour Requirements/Human Resources					
A	Staff/Coordinators	$20.00	hr	240	$4,800.00
B	Planting/Harvesting/Maintenance	$-	hr	0	$-
				Subtotal	**$4,800.00**
3. External Resources					
A	Energy Costs	$7.34	kWh	5	$36.72
B	Training and Workshops	$50.00	hr	8	$400.00
C	Flight Travel Costs	$500.00	flight	1	$500.00
D	Shipping Costs - by truck	$150.00	hr/truck	0	$-
E	Shipping Costs - by air (See Appendix _ for cost based on location)	$1.30	lb	339	$440.70
				Subtotal	**$1,377.42**
4. Ongoing Operating Resources (Maintenance Costs)					
A	Soil Amendments - compost, fertilizer, etc. (annual cost)	$10.00	per garden	1	$10.00
B	Seeds and Plants	$3.00	pk	20	$60.00
C	Fixing up and Buying new tools	$20.00	per garden	5	$100.00
D	Project Administration	$20.00	hr	40	$800.00
				Subtotal	**$970.00**
				Total	**$7,892.87**

Hydroponic Garden Tower Costs

(20 Tower Garden Kits)

Description		Cost	Unit	Quantity	Total
1. Materials and Equipment					
A	Tower starter Kit**	$617.00	kit	20	$12,340.00
B	Tower Garden Mineral Blend	$48.00	2 gallon	4	$192.00
C	Extension Kit	$84.00	each	20	$1,680.00
D	LED Indoor Light Kit	$310.00	Each	20	$6,200.00
E	Tower Garden Dolly	$84.00	each	20	$1,680.00
F	Tower Garden PH Kit	$24.00	each	4	$96.00
				Subtotal	**$22,188.00**
2. Community Resources					
	2.1 Labour Requirements/Human Resources				
A	Training and Workshops	$20.00	hr	100	$2,000.00
B	Staff/Coordinators	$20.00	hr	300	$6,000.00
				Subtotal	**$8,000.00**
3. External Resources					
A	Energy Costs for grow lights	$66.10	kWh	20	$1,321.92
B	Training and Workshops	$50.00	hr	20	$1,000.00
C	Flight Travel Costs	$500.00	flight	2	$1,000.00
D	Shipping Costs - by truck	$150.00	hr/truck	1	$150.00
E	Shipping Costs - by air	$1.30	lb	200	$260.00
				Subtotal	**$3,731.92**
4. Ongoing Operating Resources (Maintenance Costs)					
C	Water	$ -	gallons	4800	$ -
D	Seeds	$3.00	pk	60	$180.00
F	Repair & Replace tools/equipment	$50.00	per tower	20	$1,000.00
G	Mineral Blend A & B	$48.00	per tower	20	$960.00
H	pH Test Kits	$24.00	per tower	20	$480.00
J	Staff/Coordinators	$20.00	hr	300	$6,000.00
				Subtotal	**$8,620.00**
				Grand Total	**$42,539.92**

Harvest to Table Classes

(3 Courses, 10 students)

	Description	Cost	Unit	Quantity	Total
1. Wild Cooking! - Foraging and Cooking Local Wild Edibles					
A	Teacher/Instructor	$25.00	hour	48	$1,200.00
B	Administration	$15.00	hour	6	$90.00
C	Kitchen Rental	$50.00	hour	12	$600.00
D	Foraging Basket	$35.00	per student	10	$350.00
D	Foraging Knife	$28.00	per student	10	$280.00
E	Wild Edible Identification Guide	$25.00	per student	10	$250.00
F	Additional Ingredients	$100.00	$10 per student	3	$300.00
G	Consumble materials (e.g. tin foil, parchment paper, cooking oil)	$30.00	Per Class	3	$90.00
				Subtotal	**$3,160.00**
2. Fill the Pantry - Canning, Pickling, Freezing, Drying and other Food Storage Techniques					
A	Teacher/Instructor	$25.00	hour	48	$1,200.00
B	Administration	$15.00	hour	6	$90.00
C	Kitchen Rental	$50.00	hour	12	$600.00
D	Mason Jars - 500ML	$13.99	12 pk	5	$69.95
E	Mason Jars - 250ML	$11.99	12 pk	5	$59.95
F	Canning Kit (If needed, kitchen may already have)	$60.00	kit	2	$120.00
G	Additional Ingredients	$100.00	$10 per student	3	$300.00
				Subtotal	**$2,439.90**
3. Cooking from the Garden - Simple Dishes made with common garden vegetables					
A	Teacher/Instructor	$25.00	hour	48	$1,200.00
B	Administration	$15.00	hour	6	$90.00
C	Kitchen Rental	$50.00	hour	12	$600.00
D	Take home containers/mason jars	$13.99	12 pk	5	$69.95
E	Additional Ingredients	$100.00	$10 per student	3	$300.00
				Subtotal	**$2,259.95**
4. Externally Facilitated Course Instructor Costs ****Optional**					
A	Instructor	$50	hr	20	$1,000.00
B	Flight Travel Costs (if applicable)	$500.00	flight	1	$500
C	Mileage (if travelling by car)	$0.50	per km	0	$0
D	Meals & Accommodations	$140.00	per day	1	$140.00
				Subtotal	**$1,640.00**
5. Student Kitchen Tools ****Optional**					
A	*Optional - Student Kitchen Basics Kit -for students to use during course and keep	$108.20	per student	10	$1,082.00
B	*Optional - Student Canning Kit provided so they can continue canning at home	$60.00	per student	10	$600.00
				Subtotal	**$1,682.00**
				Grand Total	**$11,181.85**
				Total without Optional Costs	**$7,859.85**
				Total without Optional Costs or Teacher/Admin Wages	**$3,989.85**

Appendix F: Cargo Rates by Community

Shipping rates based NorthStar Air estimates on weight and location for various communities, May 2019.

Cargo Rates

Thunder Bay Rates

- Sachigo Lake: $1.33 / lbs.
- Bearskin Lake: $1.33 / lbs.
- Sandy Lake: $1.10 / lbs.
- Deer Lake: $1.33 / lbs.
- Poplar Hill: $1.33 / lbs.
- North Spirit Lake: $1.33 / lbs.
- Round Lake (North Caribou): $1.33 / lbs.
- Big Trout Lake (KI): $1.33 / lbs.
- Wapekeka: $1.33 / lbs.
- Fort Hope (Eabametoong): $1.02 / lbs.
- Lansdowne House (Neskantaga): $1.33 / lbs.
- Webequie: $1.33 / lbs.
- Martin Falls (Ogoki Post): $1.02 / lbs.
- Kasabonika: $1.32 / lbs.
- Muskrat Dam: $1.33 / lbs.
- Keewaywin: $1.10 / lbs.
- Cat Lake: $1.33 / lbs.

Red Lake Rates

- Sachigo: $1.04 / lbs.
- Sandy Lake: $.72 / lbs.
- Deer Lake: $.61 / lbs.
- Poplar Hill: $.40 / lbs.
- Pikangikum: $.42 / lbs.
- Keewaywin: $.72 / lbs.
- Round Lake (North Caribou Lake): $.91 / lbs.
- Wunnumin: $.59 / lbs.

Pickle Lake Rates

- Bearskin Lake: $1.00 / lbs.
- Round Lake (North Caribou Lake): $.61 / lbs.
- Lansdowne House (Neskantaga): $.57 / lbs.
- Webequie: $.80 / lbs.
- Cat Lake: $.35 / lbs.
- Kasabonika: $.91 / lbs.
- Fort Hope (Eabametoong): $.54 / lbs
- Big Trout Lake (KI): $.97 / lbs.

Please note: These rates are subject to change

Appendix G: Sample Funding Application

A sample funding application filled out by hme Enterprises that can be used you help you fill out your funding application.

FCC AgriSpirit Fund General Information

Funding available per project: $5000 - $25,000.

Total amount of funding to be allocated in 2019: $1.5 million.

FCC carefully evaluates each funding request. Based on need, we will not be able to support all requests. Application Process:

1. You can preview the questions by using the "Printable Form" link at the top right corner of the page. We recommend you print or save this copy and prepare your answers in advance of entering them here to avoid accidentally losing your work due to technical difficulties.
2. It will take approximately 40 minutes to complete the application.
3. All questions marked with an * are mandatory.
4. The application must be filled out in one sitting - the application will time out after 4 hours and you will have re-enter your information.
5. You must submit the form online; we will not accept any applications via email, mail or fax.
6. You will receive a pdf of your submission attached to your confirmation email.
7. You will receive an email regarding the outcome of your funding request no later than the end of August 2019.

Eligible for funding:

- charities registered with the Canada Revenue Agency
- municipal bodies (includes First Nations, Inuit and Métis communities)
- Non-profit organizations capable of partnering with one of the above
- entities. capital projects only

NOT eligible for funding:

- religious groups
- political groups
- individuals
- for-profit entities
- operating costs or debt reduction

For more information, check out our public

- webpages: FCC AgriSpirit Fund
- FCC AgriSpirit Fund FAQs
- FCC AgriSpirit Fund successful past projects

Deadline for applications is 11:59 p.m. (CST) March 29, 2019.

Thank you for your commitment to rural Canada. Press Next to begin.

Designation

Select the answers which best represent your organization.

* Required Fields

*Name of your organization

*What is the purpose of your organization?

An Anishinaabe community that actively pursues opportunities to sustainably grow its economy.

*Select the option that best describes your organization:

- registered charity
- (•) municipal body
- non-profit partnering with a municipal body
- non-profit partnering with a registered charity

Project overview

FCC seeks to provide funding for a variety of projects across the country. All selected projects will show that:

- it will provide a measurable benefit to the public
- the people who are eligible for benefits are either the public as a whole, a significant section of it, or a smaller section with specific unmet needs.

*Project Name

Community Gardens

*Please summarize your project in one sentence.

Community gardens vary widely in their structure, purpose and format but they provide collective opportunities for both recreational gardening and food production, fresh produce.

*Tell us more about your project and its current status.

The community intends to build a community garden, containing ten (10) 4' x 12' garden boxes, at three (3) sites in the community as identified in the Agricultural Gaps and Needs Analysis, conducted in 2019.

Community gardens provide access to fresh produce and plants as well as access to satisfying labor, neighbourhood improvement, sense of community and connection to the environment. Access to fresh produce from community gardens will improve the quality, quantity, and diversity of food available to the community. Most importantly, the fresh vegetables and fruit grown in community gardens.

Community gardens are an inexpensive, practical way to build gardening skills and agricultural capacity in the community. The community previously maintained a community garden and harvested wild rice unfortunately, when the community champion passed away, so too did the capacity to continue these operations. However, last year, a community garden was created near the Wellness Centre which has proven to be popular with residents and has encouraged participation across demographics.

*What's the need or opportunity that exists for your project, and how will it enhance the quality of life for people who live in rural communities?

Project details

Select your best answer for each section. A question you have already answered, for statistical reasons, could be asked again, for evaluation purposes.

* Required Fields

*Select the primary charitable purpose of your project.

- Providing public amenities by establishing and maintaining a multi-use recreational facility
- Providing public amenities by establishing and maintaining a public park, green space, sports field or playground
- Providing public amenities by establishing and maintaining a museum for the public.
- Relieving poverty by providing basic necessities of life, including food, clean water, clothing or shelter to those in need
- Addressing food insecurity issues
- Pr Promoting health and safety
- Relieving conditions associated with the aged or with disability (accommodation, transportation, care, meals, etc.)
- Advancing education
- Advancing the public's appreciation of the arts (providing the means to exhibit, present or perform)
- Protecting and preserving significant heritage sites
- Promoting the welfare of animals
- Other

*How does your project support sustainability in your community?

- By reducing energy use at our current facility (LED light retrofit; insulation, door or window upgrades; energy-efficient heating and cooling equipment, etc)
- By installing renewable energy technologies (solar panels, geothermal loops, wind turbines)
- By reducing waste in our community (composting and recycling equipment)
- By reducing food loss and waste (gleaning bins, refrigerated storage) or promoting sustainable food and/or water practices (food towers for food banks, collecting surplus food and distributing it to those who need it)
- By incorporating environmentally responsible building practices and construction and demolition waste management on this new build. I will elaborate below.
- None of the above apply to my project.

- [x] None of the above apply to my project, but it is directly related to sustainable development in a different way explained below.

Please explain the sustainable development aspect of your project.

It is not sustainable for the community to continue to purchase overpriced food that is flown-in. The vegetables and fruit produced by the community gardens not only serves as a dietary supplement, but also as an important substitute for high priced, low quality, processed food. Produce may also be sold or used to offset food purchases from the grocery store, reducing family food budgets and encouraging self-reliance. In some cases, gardeners can create income opportunities for themselves from retail sales of produce. Over time and scale, this will lead to increased agricultural capacity, and opportunities for economic development in the community.

*A direct beneficiary is someone who uses or participates in the project. How many people will be direct beneficiaries of your project each year?

500

Describe the direct beneficiaries and how they will benefit.

Every resident will have the opportunity to access fresh produce from the community gardens which will improve the quality, quantity, and diversity of food available to the community. Most importantly, the fresh vegetables and fruit grown in community gardens.

All ages can acquire and share knowledge related to gardening, cooking, nutrition and health. The aim of the gardens is to address food insecurity issues and to have programs that provide training in horticulture, business management, leadership development and market gardening.

*How often will your project be used?

- [ ] daily throughout the year (180+ days per year)
- [x] daily in certain seasons (50-179 days per year)
- [ ] once or twice a month, or a few weeks (25-49 days per year)
- [ ] fewer than 25 days per year

*How many rural communities will benefit from this project?

communities = towns, villages, RMs, reserves

- [ ] 7 or more
- [ ] 5 to 6
- [ ] 3 to 4
- [x] 1 to 2

List those benefiting communities here.

*What percentage of the population in those communities will benefit from the project? Omit the %.

100

*What is the name of the community where the project will be located and its population?

*How are community volunteers involved in your project?

Community members will be responsible for the construction and management of the community gardens. Community gardens foster a sense of community identity, ownership and stewardship. Community members, including students, have shown interest in gardening, and other community members do gardening with the Elders however, the program could be easily expanded to include other demographics. The main goal will be to expose community members to opportunities in food production and find community leaders and champions.

*Amount of funding requested from the FCC AgriSpirit Fund

CAD 25,000.00

*What is the total cost of the project?

25,000

*What is the total amount of funds received to date?

Write in numerals; no decimals or commas. Do not include the funds requested from FCC.

0

What is the the breakdown of funds received to date? (Grants, fundraising activities and private donations)

Indicate amounts and donors

N/A

*ADD the amount requested from the FCC Agrispirit Fund to the total funding received to date (cited in your previous answer). What percentage of total funding does this sum represent? Omit the %.

100

*Please supply a breakdown of anticipated expenditures specifically related to the funds requested from the FCC AgriSpirit Fund.

(How will the FCC funding be used?)

Lumber - $3,000

Tools & Hardware - $1,500 Portable Water Storage - $2,500 Irrigation Systems - $1,500 Shipping - $5,000

(Charter Cargo Plane or Ice Road Truck)

Training - $3,750 Training in Thunder Bay - $3,750 Growing Towers - $4,000

Not all eligible projects will be selected for funding and not all selected projects will be offered full funding. Funding is often approved for smaller portions of larger projects.

*If FCC cannot offer the full amount you have requested, will you accept partial funding?

- (●) Yes, we will still go ahead with the project, seeking other funding for completion.
- ( ) Yes, we might have to downsize the project or extend deadlines, but it will still happen and even partial funding will help.
- ( ) No, this is the only avenue of funding available at this time and full funding is the only way it will happen.

About FCC

If your project is selected for funding, you must agree to affix or erect permanent signage recognizing the contribution of FCC. This can be in scale with the donation amount relative to other donors.

*In addition to the permanent signage, if FCC chooses to support your project, how will you promote our involvement?

***How did you hear about the FCC AgriSpirit Fund?**

- [x] Media release/press conference
- [x] Recognition in promotional materials (newsletter, website, print ads)
- [x] Announcement at grand opening or event
- [x] Social media
- [x] Naming rights

***How did you hear about the FCC AgriSpirit Fund?**

- ( ) Postcard/handout
- ( ) FCC employee
- ( ) another charity or non-profit
- ( ) a previous FCC AgriSpirit Fund recipient other word of mouth
- ( ) newspaper or print ad
- ( ) Radio
- (●) FCC Website
- ( ) email
- ( ) Social media (Facebook, Twitter, etc.)

- We have applied in past years
- other

Contact information

Mouse over titles to view definitions.

If you are partnering with a registered charity or municipal body, these fields will reflect some of the information that you entered for them. Please modify as necessary.

*First Name

*Last Name Country

*Street address or P.O. Box

Canada

*City/Town

*Province/Territory

Ontario

*Postal Code

*Email

*Confirm Email Phone

Website

If applicable, please supply the social media accounts for your organization.

Terms and conditions

Your application will be disqualified if:

- your organization/project has received support from the FCC AgriSpirit Fund in the past four years (2015-2018)
- your project will be complete or cited expenses incurred before funding is announced (before the end of August).
- your project will not be completed within two years of receiving funding
- (December 2021) your project adversely impacts the environment

*When do you anticipate your project will be completed?

31/08/2020

Date must be AFTER August 31, 2019 and BEFORE December 31, 2021.

*What obstacle or challenges (if any) may interfere with the completion of the project?

Logistics of being a fly-in community only accessible via airplane or iceroad during the winter

In applying for this funding, you imply consent to receive FCC emails for a period of two years according to Canada's Anti-Spam Legislation (CASL). In order to continue with this application, you must give your express consent by responding to the question below.

Do you consent to receive electronic messages from FCC about the FCC AgriSpirit Fund?

(•) Yes

Your Comments

This is your chance to provide additional information about your organization or your project that you believe should be considered during the evaluation of your request. If you had trouble entering phone numbers, please enter them here.

We do not accept any additional documents.

We are currently in a state of emergency. The challenges facing our community are numerous due to the location, funding levels and size. The distance from large markets, and the added costs of transportation is a daily source of difficulty in the community, from purchasing household items to food.

Review and Submit

Thank you! That's all the questions we have for now.

Before you submit, please take time to review or print a copy of your application your application. Use the Previous button to go back and make any edits.

References

[i] Ontario Food Insecurity Rates, https://www.ontario.ca/page/building-ontarios-first-food-security-strategy

[ii] Korzun, M., & Webb, C. 2014. Opportunities to fill the gaps in knowledge about the impacts of food education for children and youth in Ontario. Guelph, ON: Institute for Community Engaged Scholarship. https://dspace.lib.uoguelph.ca/xmlui/handle/10214/8902

[iii] Building a Vertical Hydroponic Tower. Oklahoma Cooperative Extension Service. 2017. http://factsheets.okstate.edu/documents/13095-2/

[iv] Oklahoma Cooperative Extension Service. 2017. Building a Vertical Hydroponic Tower, http://factsheets.okstate.edu/documents/13095-2/

[v] Mills S, White M, Brown H, Wrieden W, Kwasnicka D, Halligan J, et al. Health and social determinants and outcomes of home cooking: a systematic review of observational studies. Appetite. 2017; 111:116-134.

[vii] "Before you Begin" – Hydroponic Towers: https://uponics.com/hydroponic-tower/

[viii] Vegetable Gardner http://www.vegetablegardener.com/item/61572/9-tips-for-growing-vegetables-in-window-boxes

[viii] 25 of the best plants for Indoor Hydroponic Gardens: https://dengarden.com/gardening/indoor-hydroponic-garden

[ix] The Northern Homestead. https://northernhomestead.com/planting-a-hydroponic-garden/

[x] Engage Student with a Classroom Tower Garden: https://www.towergarden.ca/school-gardens