

Gardening in Northern Ontario

Why Garden?

Healthy food

Increase self-sufficiency and Food security

Save money

Improved mental health

Exercise



UP NORTH ON CLIMATE
Climate Change Impact and Adaptation
Study for the North of Ontario

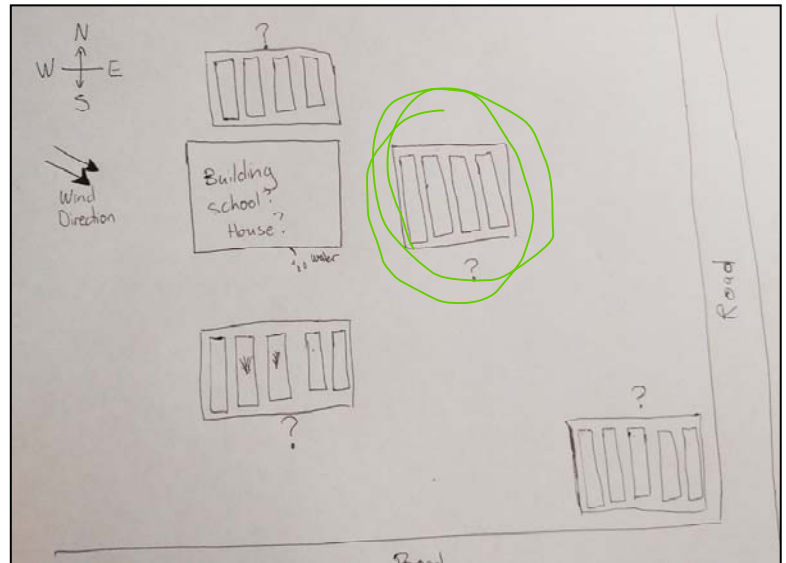
Starting a garden in your yard or community

The location

Draw simple sketch (like the one to the right) of possible garden sites within your yard or town.

Consider the following:

- Easy access; gardens should be visited regularly
- Access to water; either from a tap or from a lake or river
- Full sun; most vegetable plants need at least 6 hours of sun but will produce better with 8-10 hours
- Protection from the wind; if the garden is not near a building, situate your garden so there is a row of trees to the north and west
- Not in a low-lying area; cold air can accumulate and cause damage to plants
- Good soil; if not, you can build good soil, see next section
- Ask permission to make sure the land can be used for a garden



Which area would you select to start your garden?

The soil

Soil should be:

- airy
- able to hold water, but also able to drain
- high in nutrients
- neutral pH (6-7.5)



It may be difficult to find good soil in the north but building good soil can usually be done with local materials. For example, if you have a hard clay soil, you mix in peat because it holds water and is porous. However, peat does not often contain enough nutrients for garden vegetables and should be supplemented with other local materials to add nutrients. For example, the community garden in North Caribou Lake used fish compost and at one point, Fort Albany used composted cattle manure as fertilizer.

To determine the pH of the soil, you can purchase a soil testing kit or pH meter. A soil pH that is too high or too low can limit the amount of nutrients that are available to plants. Ideally the soil pH should be from about 6 to 7.5. Some material may need to be added to either lower or raise the pH of your current soil. For example, adding peat will lower the pH and adding ashes will raise the pH

What are some local materials I can use to add nutrients to the soil?

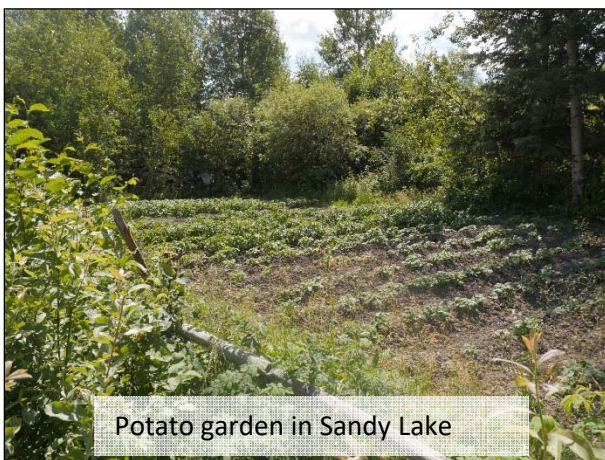
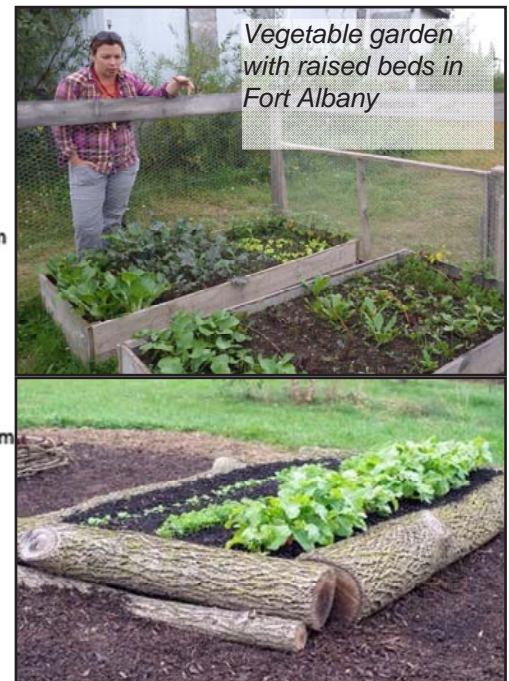
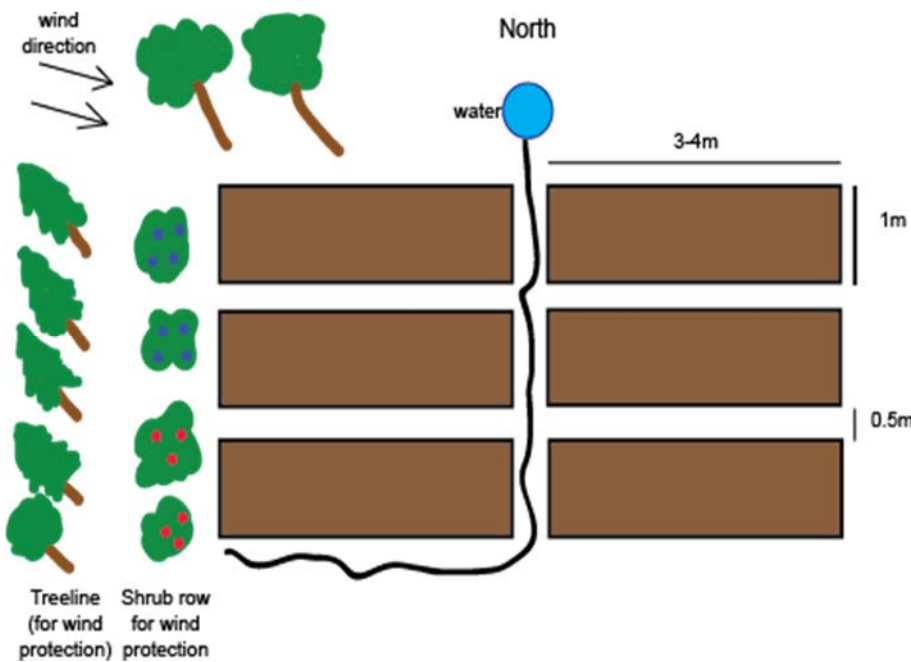
Some other examples include: tree leaves, compost, composted manure, peat moss, hunting waste, wood chips, ashes from burning wood.

The architecture of the garden

There are many ways to make a garden; in the ground, raised beds or containers.

Planting directly into the grounds allows for larger gardens and is often used for potatoes. Raised beds and containers provide good drainage, promote root development and can warm up more quickly in the spring, allowing you to start seedlings a bit earlier. They allow you to maximize your space, extend the garden season, and reduce garden maintenance time. When constructing the raised bed in is a good idea to lay out decomposable material such as cardboard at the bottom. This will kill the weeds underneath, but after a year or so, the roots from your vegetables will be able to grow and access the soil beneath the ground level.

Whether you build raised garden beds or simply grow plants directly in the ground, you should make rows as a way to organize your plants. Garden rows can run either north to south or west to east, but strategically place tall plants at the northern side of the garden, so they don't block other plants from the sun. The width of your garden rows should be no more than twice the length of a person's reach, approximately 1m (3ft) is ideal. Walkways should be wide enough to allow for a person to walk comfortably with some equipment, about 0.5m (1 ½ ft).



Fencing is optional but is useful to keep out animals and deter people from interfering with your garden. Fencing can be constructed from affordable materials already in the community like skids, trees for lumber and chicken wire, or they can be more costly if the lumber is purchased. Some fences can be constructed for free but will require a great deal of time and effort. Other garden features may include trellises, archways and stakes for taller heavy plants such as tomatoes.

What costs can I expect?

Before you start your garden, consider there will be some start-up costs. But the amount you spend will depend on your design and how much equipment you purchase. A first garden can cost as little as \$30 if you already have equipment and you plan on doing everything yourself. Larger gardens can cost as much as \$15,000 if it's a community garden project that includes a greenhouse or extensive fencing or a complicated watering system. For large projects, communities can apply for funding.

Here is a look at a sample garden budget.

Equipment and material	Number	Cost per unit	Start-up Cost	Annual Cost	Notes
Tools					
Shovels	1	\$30	\$90		
Hand spades	6	\$10	\$60		
Rake	1	\$35	\$35		
Pitch Fork	1	\$25	\$25		
Wheelbarrow	1	\$100	\$100		
Plastic sheets (vapour barrier, clear garbage bags, etc.)	25m ²	0	-		(use plastics from packing materials, ask local store)
Frost protection sheets	1 for each bed	0	-		(use old bed sheets/ tarps)
Miscellaneous (twine, pruners, gloves, labels, pots, etc.)			\$60	\$20	
Seeds					
	15 packages	\$2-5	\$15-75	\$30	
Irrigation equipment					
Water hose (100ft)	1	\$40	\$40		
Water nozzle	1	\$15	\$15		
Watering can	1	\$15	\$15		
Total Costs			\$500	\$50	
Optional costs for consideration					
Fencing	*		\$200-5000		*Dependent on size of garden area, and type of fencing material purchased
Greenhouse			\$300-20000*		*Dependent on size of greenhouse, construction materials used, labour to construct, etc
Garden coordinator				\$2000-15000*	*Dependent on roles and involvement in project and volunteers

Seed Suppliers

Local grocery and hardware stores often carry vegetable seeds in the spring

West coast seeds: <https://www.westcoastseeds.com/>

Veseys seeds: <https://www.veseys.com/>

Stokes seeds: <https://www.stokeseeds.com/>

OSC seeds: <https://www.oscseeds.com/>

Seeds of diversity: <https://seeds.ca/diversity/seed-catalogue-index> (membership fees)

A more complete list of seed suppliers can be found at:

<http://www.omafra.gov.on.ca/english/crops/resource/vegseed.htm>



The What? When? and How? of garden planting

What to grow?

Choosing what to grow if you have never gardened can be a bit overwhelming at first but is also very exciting. A few things to consider when deciding which seeds to purchase.

1. Plant what you will actually eat!

Don't plant 20 feet of kale if you're thinking you might want to try a kale smoothie. Don't be afraid to try new things, but make sure you focus on what you know you will eat and enjoy so you stay excited about gardening. I try to pick one new vegetable or fruit to try growing every year.

2. Plant what will grow!

Select plants that are **cold hardy** or able to grow to maturity in the number of frost-free days in your area. Consider selecting varieties that have shorter growing seasons. I have spent a lot of energy trying to grow a watermelon, without any luck. Check out your plant hardiness zone: http://planthardiness.gc.ca/ph_main.pl?m=1

In general, if a plant needs more than 110 days to reach maturity, it will require more effort to grow in northern Ontario. For example, peppers and tomatoes need to be started indoors several months early and under lights in order to produce fruit before the fall frost. The days to maturity for a plant can be found on the seed packet (See below to learn how to read a seed packet). We have included a planting guide below and have more information on reading a seed package on the next page.

3. Plant what is expensive in your community!

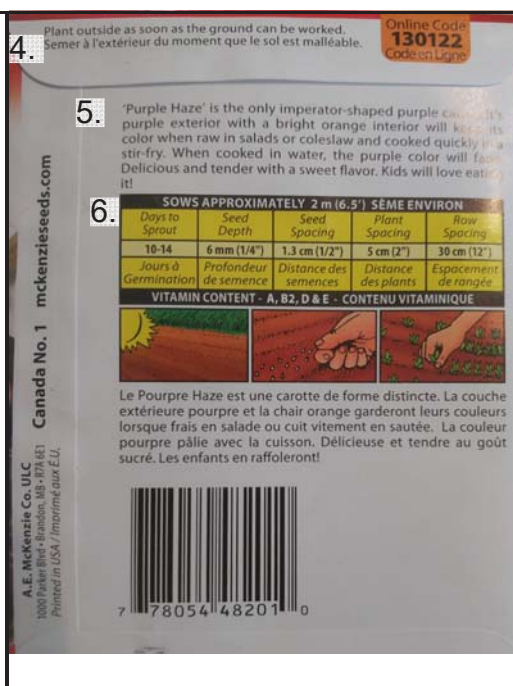
Every year, I focus on growing a lot of lettuce, it is easy to grow and saves us money during the growing season. I don't grow onions or potatoes anymore because they are cheap to buy in our town. However, this will differ for your community, especially if you are in a remote area.

Region	Date of First frost	Frost free days
Chapleau	May 27	113
Cochrane	June 5	102
Deer Lake	May 22	125
Dryden	May 17	130
Fort Albany	June 12	96
Fort Hope	May 31	110
Fort Severn	June 12	100
Lac Seul	May 18	129
Lansdowne House	June 1	111
Longlac	May 31	108
Moosonee	June 10	98
Nipigon	June 1	105
North Caribou Lake	May 28	115
Sandy Lake	May 25	121
Sault St Marie	May 15	145
Sioux Lookout	May 25	117
Sudbury	May 14	134
Timmins	May 30	109
Winisk	June 16	95
Wunnumin Lake	May 30	113



Reading a seed packet:

1. Price
2. Variety
3. Days for plant to reach maturity. In this example, from seed on the ground to carrot is 70 days); for plants that need to be started indoors like tomatoes, 70 days would mean from when you move your tomato plants to the garden to when you get tomatoes. Use this as a guide to select varieties that have shorter days to maturity.
4. When to plant the seed indoors (relative to the date of last frost for your region).
5. Details about the plant variety.
6. Planting instructions: How many days for the seed to sprout, depth to plant seed, how far apart to plant seeds, how far apart to place plants, how far apart plants between rows.



When to grow?

Look on the seed packet to know when to plant. You can also use garden calendars as a guide to know when to plant. Here is an example of a garden calendar:

<https://www.almanac.com/gardening/planting-calendar/ON>

Enter keywords... **GO** **THE OLD FARMER'S ALMANAC**
FOUNDED IN 1792

WEATHER ▾ | **ASTRONOMY** ▾ | **GARDENING** ▾ | **CALENDAR** ▾ | **FOOD** ▾

PLANTING CALENDAR FOR SANDY LAKE, ON

Here is a table to get you started.

Where to plant	When to plant	Cold hardy?	Vegetable type
Directly into garden	Just before date of last frost	Yes	dill, beets, carrots, leaf lettuce, onion bulbs, peas (soak first), potatoes (with 'eyes'), radishes, swiss chard, turnips
Directly into garden	After date of last frost	No	beans, corn, cilantro
In pots indoors (4-8 weeks before date of last frost)	Transplant after date of last frost	Yes	broccoli, cabbage, cauliflower, kale, celery, onions from seed, parsley, romaine lettuce
In pots indoors (4-8 weeks before date of last frost)	Transplant after date of last frost	No	cucumbers, peppers, pumpkins, squash, tomatoes, zucchini, basil
Depends	Depends	Yes, usually	Perennials: chives, horse radish*, rhubarb, mint*, strawberries*, asparagus Woody perennials: blueberries, currants, gooseberries, Saskatoon berries, raspberries*

*These species can become 'weedy', plant in a garden corner away from other plots.

Extending the growing season

Hoop houses, cold frames, greenhouses, and covering plants with sheets during frost are all ways of extending the growing season. Greenhouses or cold frames can be constructed for a couple hundred dollars. They allow the soil to warm up more quickly in the spring, allowing seeds from cold hardy species to be started a couple weeks early and protect plants from mild frosts. Yields and germination rates can also be improved in a greenhouse or cold frame.

If greenhouses are not an option, sheets should always be on hand to cover crops on frost nights (weather forecasts below 3°C should be considered a frost risk).



How to grow?

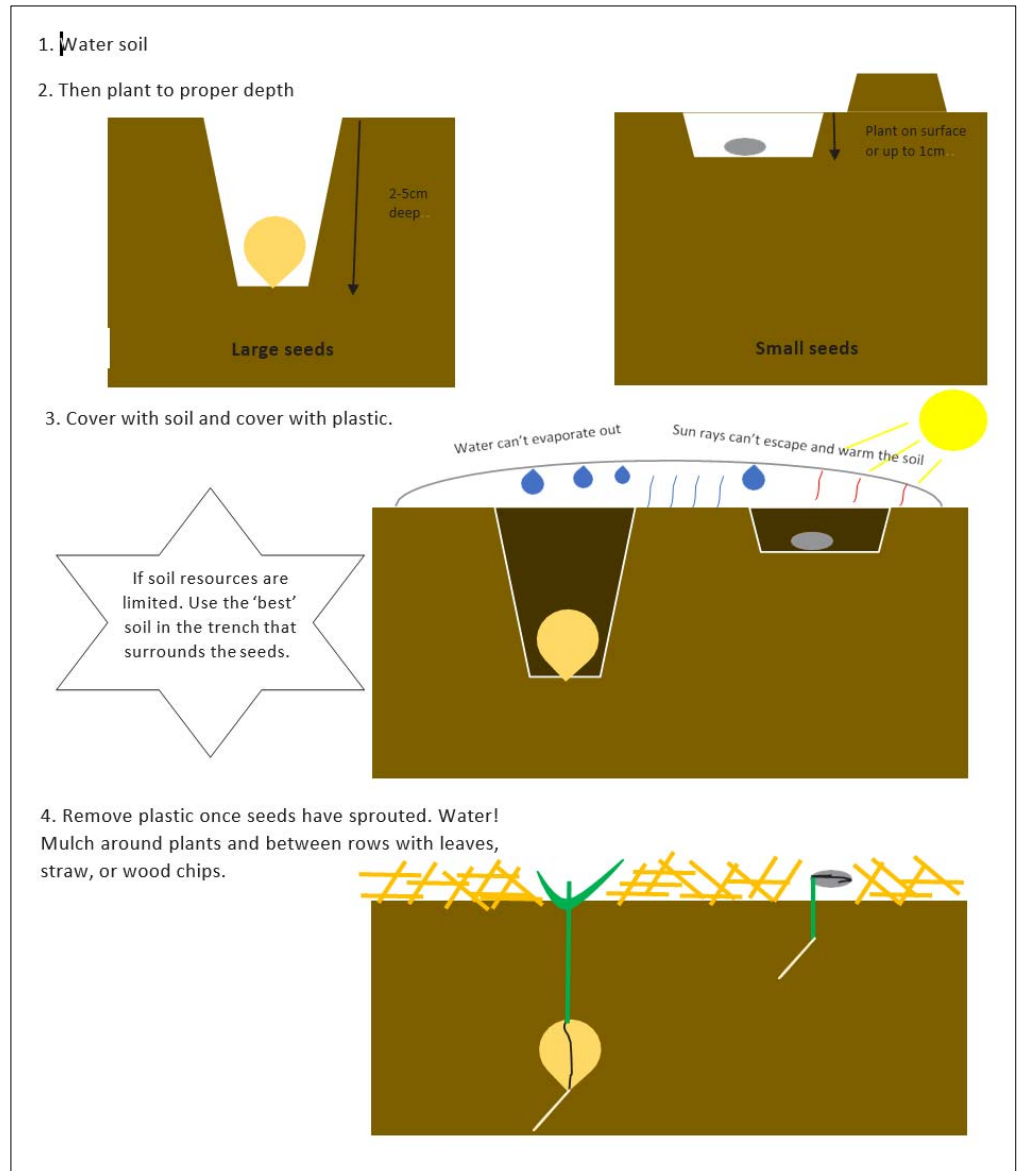
Seeds come in all shapes and sizes, but in general you should plant a seed twice as deep as the size of the seed; if your seed is 1cm like a bean seed, plant it 2cm under the soil. Again, follow the instructions on the seed package for the depth to plant the seed and the distance between seeds for planting. Some seeds need to be planted indoors several weeks before the weather is warm. For these plants, small paper cups with soil will work. Plant 2-3 seeds per cup, but only allow one to continue to grow, by plucking out any others.

Garden layout ideas and concepts

squarefoot gardening
hugelkultur
companion planting
succession planting
garden crop rotation

Planting seeds outdoors

Seeds require water, warmth, and most often light. Soil should be kept moist but not soaked. If the soil is dry, water an hour or so before planting so the seeds stay in place. Dig a row to the correct depth (based on seed package recommendation). If the soil is very heavy, consider digging the trench a bit deeper and adding some of the 'best soil'; this might help the seedling get started. The soil must stay moist until the seeds sprout, so water often or cover the soil with plastic; a clear garbage bag held by rocks will work. This also warms the soil more quickly. After your plants are up, mulch around them with newspaper, wood chips, tree leaves or grass clippings to keep moisture in the soil and stop weeds.



Growing potatoes

Potatoes that start to grow 'eyes' are called seed potatoes and can be planted to grow more potatoes. Large potatoes can be cut into pieces as long as there is at least 2 eyes per piece. Plant seed potatoes at a depth of 20-50cm (or as shallow as 5cm in very heavy soil, such as clay). Potatoes prefer well-drained soils. Space seed potatoes 30-60cm apart.



Getting nutrients

It's best to try to add nutrients to the soil naturally. By adding mulch on the garden, it breaks down over time and contributes to soil health; it also retains moisture and keeps weeds down. Mulch can be tree leaves, newspaper, wood chips, grass clippings etc. Some other sources of nutrients are food and animal waste; these however should be composted before going into the garden.

Composting

Composting is essential for any garden. It is made from decomposed materials such as kitchen scraps, dried leaves, and parts of the plants that are not used in the fall. Over time this material turns into soil that is rich in nutrients and can be added back to the garden. Some concern maybe that animals will get into the compost and be attracted to the garden area. By composting properly, this risk can be minimized. Composting can be as simple as piling all the materials up in a corner of the garden and layering kitchen scraps with dry leaves, or it can be more elaborate. There are plenty of resources available online.



Kitchen scraps ready to be composted



Kitchen scraps transformed to compost, months later

Harvesting and preserving

The best part of gardening is enjoying your harvests! For fast growing crops like lettuce, beans, peas and carrots, they can be harvested throughout the season and replanted to have a continual supply. Harvesting in the fall is the busiest time. Save time to harvest, clean the garden beds and stock the compost pile, and preserve some of your harvests. Many vegetables can be kept in a cold cellar that is cool, dark, and has moderate humidity. Other options to preserve vegetables includes: freezing, canning, dehydrating, and fermenting.



Gardening in the north

Community members in various communities in the north have backyard gardens and are successfully making their own food. Some communities have community gardens. For some inspiration, check these out:

Eabametoong: <http://eabametoong.firstnation.ca/community/groups-and-projects/community-garden-project/>

North Caribou Lake: <https://kiitigaanaskihub.ca/2018/03/north-caribou-lakes-boreal-garden-project/>

Useful Resources

Basic gardening manual for Northern Manitoba: <https://www.gov.mb.ca/inr/pdf/pubs/mafri-gnm.pdf>

Community garden guide: https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/mipmcot9407.pdf

Community garden toolkit: <http://www.nbfoodsecurity.ca/wp-content/uploads/2016/08/Community-Garden-Toolkit.pdf>

<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-community-gardens-handbook.pdf>

Book: Northern gardener

Book: The year-round vegetable gardener