



**Grow Eat
Learn**
Nourish Nova Scotia

Apple Tree Guild

How-to Guide



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Climate Connections

Adapting to climate change is critical for our food system. By planting and tending to an apple tree guild, students can learn about food production and its interdependence with soil, plants, animals and weather. Engaging with a fruit tree guild, students become stewards of a biodiverse ecosystem that sequesters carbon, retains water, produces food and requires less and less input over time. **Check out these climate actions that youth participate in through gardening!**



Soil
Stewardship



Habitat Creation
& Biodiversity



Waste Reduction &
Circular Systems



Food Security &
Sovereignty



Water
Stewardship

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Introduction

What is a Guild?

A “guild” is a collection of plants that keep each other company and grow well together. Guilds are designed with inspiration from nature, especially forest systems. They often include a canopy layer, understory shrub layer, perennial plants, ground covers, fungal layer, root layer, and a vining layer. This layered approach encourages beneficial relationships to form between plants within a healthy ecosystem. **Multiple guilds linked together create a food forest.**



Why Plant an Apple Tree Guild?

An apple tree guild is a great way to create a biodiverse ecosystem that supports a central fruit tree. Each plant in the guild has a special role to play and often serves multiple functions.

Plants in a guild can:

- Attract insects for pollination and deter others.
- Create a habitat for important critters.
- Help retain water, minimizing the need for watering.
- Fill in space, minimizing the need for weeding.
- Provide food for people, pollinators, and birds
- Help build fertile soil by drawing up minerals and nutrients from the soil to then be mulch on top.



...plant communities, that permaculture calls guilds, form healthy, interacting networks that reduce the gardener’s labor, yield abundant gifts for people and wildlife, and help the environment by restoring nature’s cycles.

—Toby Hemenway, Gaia’s Garden



Designing an Apple Tree Guild

There are countless ways to arrange your plant community. When it comes to designing the layout of your apple tree guild, start by getting clear on what you hope to grow and take time to observe your site.

Keep in mind:

- **Choose your location wisely** after observing the site, ideally through all four seasons, noting elements like how water pools or moves, soil quality, and wind and sun direction.
- **Take time to build healthy soil** (See Sheet Mulching link on page 7).
- **Learn more** about the functions of each plant and their relationship to other plants (See books on page 7). For example, planting alliums around your tree can deter pests while providing food.
- **Consider how the guild will change over time** as the tree and plants grow.
- **Plant accordingly** with sun-loving plants on the south side of the tree and shade-tolerant plants on the north side.
- **Plant densely**, including annuals, until the perennials spread.
- **Include plants that bloom at different times** in the season to ensure a succession of beauty and food for people and pollinators.



Tips

If you are planting a guild on school grounds, check with your principal first!

Water your newly planted guild well and often in the first year. Over time as the tree and plants become established, watering will not be as necessary.

Minimize exposed soil. A well-balanced ecosystem with covered soil, whether covered by plants or mulch, retains moisture well and avoids erosion.

Sow annual seeds directly into the ground to fill space and grow food in the early stages before perennials have filled in. Try:

- Bush beans
- Sunflowers
- Calendula
- Salad greens
- Herbs

Layers of an Apple Tree Guild

Canopy Layer

Apple Tree – Tree can be planted in the spring or the fall and will be the central, tallest element in your guild. Fall planting allows the tree to establish strong roots without the watering needs during the hot summer. If possible, we recommend a **grafted bare-root tree** for a healthy start. Choose from standard, semi-dwarf, and dwarf options - talk to your local nursery about which tree will suit your needs and site best.

Tips for your tree:

- Stake tree
- Choose bare-root and grafted varieties (See "Tips" on page 7)
- Mulch deeply with wood chips leaving space around trunk

Understory Layer

Shrubs – Choose 3-5 shrubs to plant around your apple tree. When making your selections, consider what each shrub would bring to your ecosystem and what its needs are. For example, does this shrub produce food for people, birds, or pollinators? Does this shrub add nitrogen to the soil to add fertility to the fruit tree guild? Does the shrub require full sun or will it grow well in part shade?

Examples:

- Currants
- Elderberry
- Gooseberry
- High-bush blueberry

Herbaceous Layer

This layer is made up of plants that are between shrubs and ground cover in height. They are usually perennials, meaning each year they die back in the winter to return the next spring. Choose from pollinator-friendly flowers like coneflower and Black Eyed Susans to edibles like rhubarb and herbs. This layer allows you to incorporate an abundance of biodiversity into your guild!

Examples:

- Rhubarb
- Hosta
- Swamp milkweed
- Coneflower

Ground Cover Layer

To start, overexposed soil around plants with wood chips. As ground cover plants begin to spread, they will protect soil, suppress weeds, and offer food and herbs for people and pollinators.

Examples:

- Strawberries
- Thyme
- Clover

Other layers that can be incorporated:

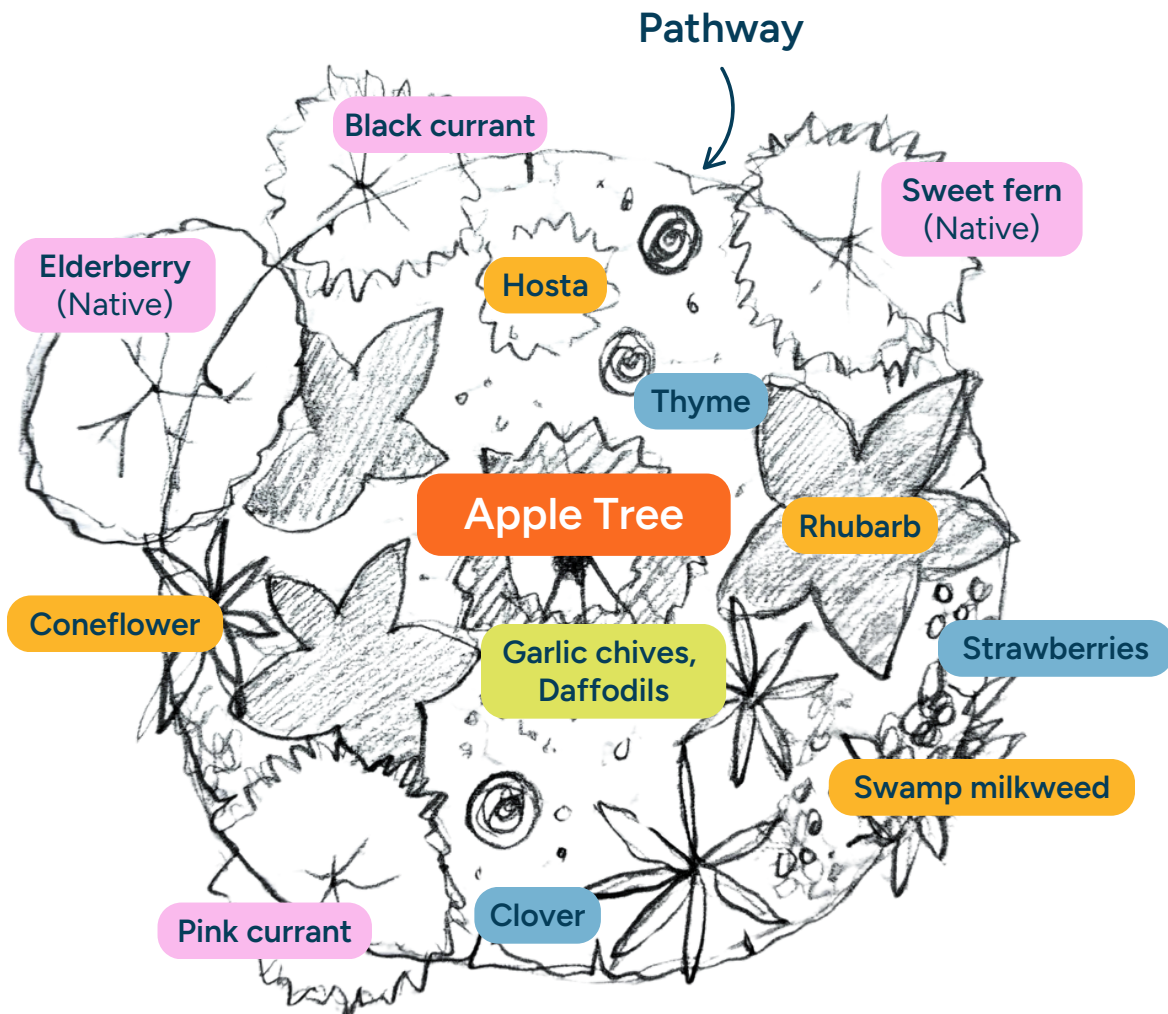
Bulb/Root Layer (e.g., perennial onions, groundnut)

Fungal Layer (e.g., wine cap mushrooms)

Vining Layer (e.g., pole beans)



Example Apple Tree Guild Design



Apple Tree Guild Layers

Canopy

Understory

Herbaceous

Groundcovers

Grass/weed-suppressing bulbs



Related Resources

Digital resources

- [Sheet Mulching](#)
- [Fruit Tree Guilds](#)
- [Designing Food Forest Guilds](#)
- [Dwarf, Semi-Dwarf & Standard](#)
- [3 Steps to Start a Fruit Tree Guild](#)
- [How to Transplant Perennials and Trees](#)
- [Charlie the Tree Guy Planting Bare-root Fruit Trees](#)
- [What is a Plant Guild](#)
- [How to Grow Currants and Gooseberries](#)
- [How to Grow Blueberries](#)

Books

- [Who Lives in the Apple Tree Guild? A Look Inside the Permaculture Orchard](#)
- [Integrated Forest Gardening](#)
- [Gaia's Garden](#)

Tips for Success

- Consider a phased approach to plants, starting small.
For example:
 - **Phase 1 (Year 1):** Sheet mulch in the spring. Seed annuals like beans, calendula and sunflowers into the top compost layer of your sheet mulch.
 - **Phase 2 (Year 1):** Plant tree, shrubs, and perennials in the fall.
 - **Phase 3 (Year 2):** In the next spring, observe how your tree and perennials overwintered and add more annuals in the empty spaces.
- Consider planting a grafted bare-root apple tree. A bare-root tree is a tree that is sold without soil and a pot. Instead, trees are dug out of nursery beds during dormancy and their roots are wrapped in moist materials like paper, sawdust or burlap for transport. Bare-root trees often have healthy root systems having never been confined to a pot. A tree that has been growing in a pot for its first year(s) can end up with encircling “pot-bound” roots.
- Fruit trees don't like to be waterlogged. Mound up soil and dig a moat around that is covered in mulch.
- Ask around in community to find someone who can guide pruning and tree care over time.

