

Beginner Bonsai Workshop – BlackRoot Farms

What Is Bonsai?

The word “bonsai” is derived from two Chinese written characters (kanji), the first of which means “tray,” “basin,” or “pot,” and the second of which means “planting.” So, it is a **potted plant**.

The true purpose of bonsai is to capture the beauty of a large, mature tree in nature in a (relatively) small package.

An Extremely Brief History of Bonsai

Bonsai originated in China in around 700 AD. Originally called punsai, the elite class collected native trees from the wild and grew them in pots. By the 16th century, this had become pun tsai, or “tray planting” in which miniature landscapes were created in small trays. This is now known as “Penjing”

The art first appeared in Japan in the 8/9th century and transformed the art by making them more compact and only using one tree per pot, and generally using deeper pots. Bonsai has since evolved into a major competition in Japan, where artists compete for money, political power and prestige. Bonsai spread to the west in the late 19th century, where it has been reinvented with more abstract bonsai forms.

Aren't Bonsai Small?



Bonsai Species

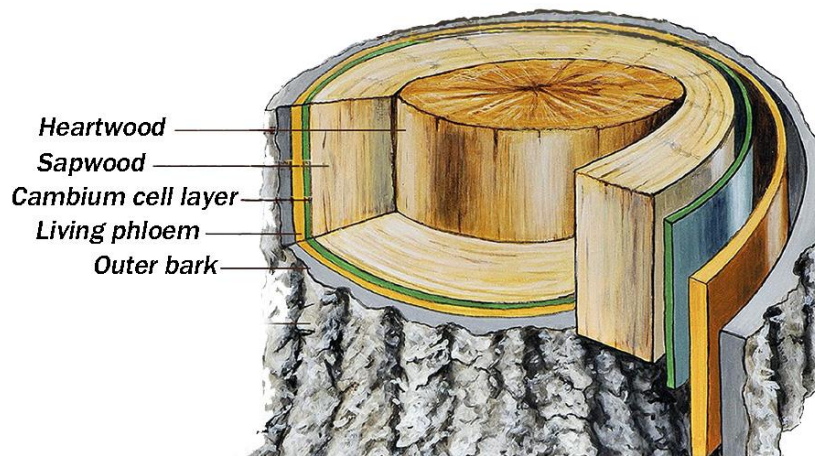
Traditionally bonsai was made from evergreen coniferous species and were primarily outdoor plants. However, bonsai can be and is made from **almost any species**, even succulents.

Four main types of bonsai species.

1. **Evergreens/conifers** - Trees are green year round (some do turn purple/brown in winter). Their leaves contain natural antifreeze and are often waxy to reduce moisture loss. During this time, generally do not grow significantly, nor are they fully dormant, making repotting and pruning ideal in the early spring.
2. **Deciduous** - Trees go dormant during winter and drop their leaves, storing energy in their tissues until spring. For the most part, they can be repotted/pruned all winter, but major cuts should be done in late winter/early spring.
3. **Subtropicals** - can often handle mild freezes (~20°F and up), but not much colder – best if you have a greenhouse or lightly heated sunroom, drafty window. May be deciduous or evergreen/coniferous.
4. **Tropicals** - trees are usually evergreen (some drop leaves during winter), but generally cannot tolerate frosts or freezing temperatures. Indoors in the winter, outdoors in the summer

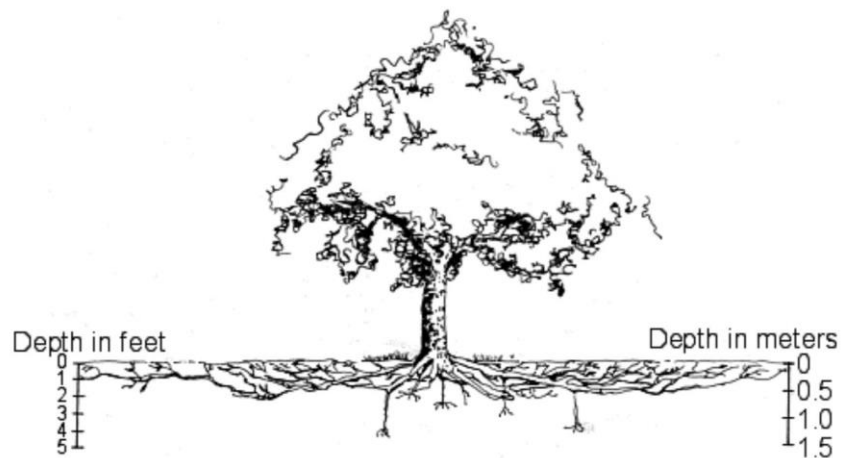
You must research and understand the needs of the specific species if you want to keep it alive and healthy!

Tree Anatomy – Living Tissue



- **Cambium and phloem** are the “living” parts of the tree – transporting nutrients and sugars between the root system and the rest of the tree.
- **Heartwood and sapwood** are primarily structural.
- **The bark** is primarily to protect the cambium and phloem from pest, sunlight, frost, and physical injury.

Tree Anatomy – Root System



- As kids we’re told “as above, so below”. Unfortunately this is only partially true for tree roots.
- Tree root systems can extend up to 5 times the diameter of the visible tree.
- Most of the roots that anchor the tree are the wide, shallow root systems.
- Tap roots main purpose is to support trees when young and serve no real purpose in mature trees. – this is why trees can be perfectly healthy in shallow bonsai pots, the tap root is non-essential. This is also why we wire trees into bonsai pots!

How Are Bonsai Created?

The basics of bonsai creation are relatively simple:

1. Grow and define major structure (thick trunks, taper, and root system) either in a container, or in a field.
2. Repot into “final pot”
3. Further refinement (ramification, wiring, etc.) and maintenance.

Alternatively, some trees are collected from the wild and potted and developed from there (**Yamadori**)

Bonsai Development - Creating Taper

The purpose of **taper** is to make the tree look much older/mature than it is. Taper is the natural tendency for the trunk to get smaller as we move up the tree trunk. In nature, this occurs over 10s of feet of tree trunk—in bonsai we have to create this taper by pruning/chopping. The process involves chopping the trunk (or branches) and encouraging growth of new shoots over time.

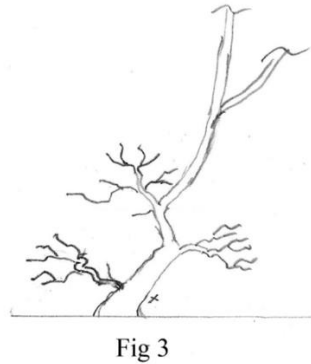
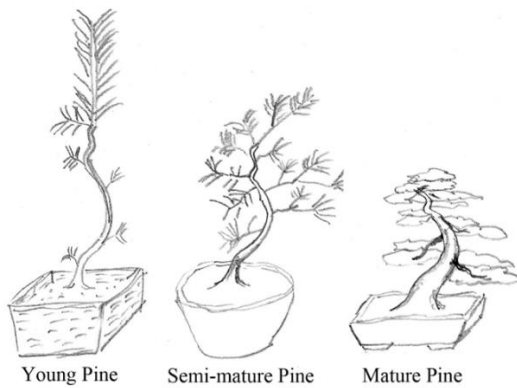


Fig 3



Fig 4

Wiring

Wiring is used for two major purposes

1. Securing the tree to the pot to prevent it from blowing over as easily and popping out the pot.
2. Creating interest – bending the trunk or branches to make the tree look more mature and interesting

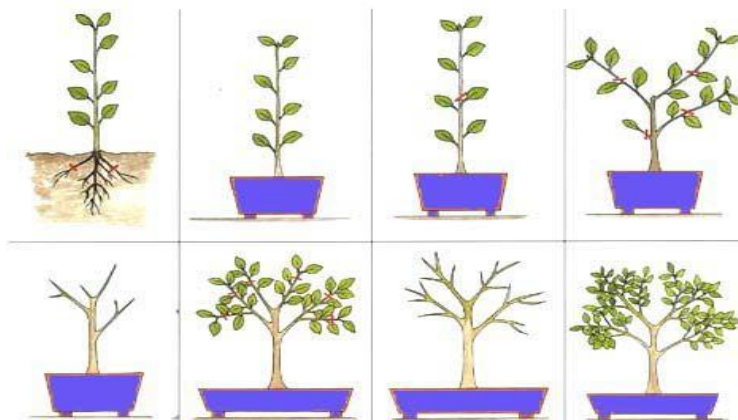
Two-branch wiring principal – (demo)

Wire vs branch size (show and tell)

Removing wires in time (or leave indefinitely for conifers) – if you don't remove, wires may scar tissue permanently! Generally anywhere from 3-4 weeks to 2-3 months is sufficient to “lock in” the new branch shape.

Types of wires – anodized aluminum, copper, stainless/galvanized steel – anything can be used, but anodized aluminum is probably the most cost effective and can be purchased on amazon/ebay.

Bonsai Development - Pruning For Ramification



Ramification – the process of increasing the number of growing nodes/branches and refining the overall bonsai branch structure. The important concept here is that you should leave at least two growth nodes (for most species) when you prune, that way with each cut, you're creating two new branches. In some cases, one node is left in order to redirect the branch, but not increase ramification.

Bonsai Development -Repotting

Depending on the stage of the bonsai, trees are usually repotted once every 1-3 years. While still developing the major structure, the larger pot the more growth, and thus the more structure to work with. As the tree becomes more mature and the structure is defined, they are moved to smaller pots over time.

Timing - Repotting time is species dependent, but generally best when tree is about to break dormancy and enter rapid growth cycle (Late February through March in Missouri). For indoor/tropical bonsai, timing is less important, but generally best to repot before a major growth spurt (before moving outside for summer as an example).

Root pruning is done over time to encourage nebari (root flare) as well as reduce the pot size over time. Generally, removing more than 2/3 of the root system is risky. Half is reasonably safe.

If soil becomes waterlogged (will smell moldy or rotten) or hydrophobic (will not absorb water), repotting may be the only fix, but you do not need to report bonsai trees unless necessary.

Bonsai Care – Soil

Basic bonsai soil is usually some combination of:

- Peat/pine bark/compost for moisture retention
- Akadama/turface (calcined clay) – for moisture retention, drainage, and some micronutrients
- Pumice/lava rock/perlite – for air-space and structure (providing oxygen to roots)
- Gravel/coarse sand – for drainage, weight, and structure

Good bonsai soil is critical as roots require a balance of oxygen and water, while also requiring they be somewhat gritty and coarse to help anchor the tree in the small pot.

Bonsai Care – Fertilization

Fertilization is not “food” — trees use sunlight + CO₂ to create sugars for energy. Think of fertilizer more like essential vitamins. Nutrition (fertilizer) will not improve a tree with a poor balance of oxygen and water (trees create “food” from sunlight + CO₂, fertilizer is more like vitamins than “food”).

- Traditional feeding – organic fertilizer laid in clumps or t-bags at one or more locations in the pot
- Modern feeding – liquid fertilizer (e.g., miracle grow) or slow-release granular fertilizer (e.g., osmocote).
- Fertilization time – Spring and summer, also early fall for evergreens since they photosynthesize year round.

Consider your goal – do you want the tree to grow fast for major development or branch thickening, or do you want slow growth for further refinement and ramification? Heaving feeding can cause long shoots to grow and speed up trunk thickening, while light feeding tends to produce slower growth and finer branching.

Bonsai Care – Watering

Watering is very specific to each bonsai, as the stage of development, pot size, soil type, and goals all affect watering!

Outdoor Bonsai

- **Growing season** - Most bonsai will require water 1-2 times per day during the growing season. However, if the surface of the soil is wet, do not water to prevent root rot. If the roots dry out completely, this can be fatal for many trees. Always ensure the soil is fully saturated with each water (water should drip/run out of the bottom after watering).
- **Winter season** - roots must not be allowed to dry out, but a little mulch/leaves goes a long way to retain moisture. Still check every 1-2 weeks to make sure the soil is moist.

Indoor Bonsai – this is a bit more complex, warmer indoor temps and low light often slow the growth of tropical indoor bonsai unless you have a very bright window. Care must be taken to water them only when needed which could be

every day, once a week, or once a month. If it smells rotten, you're watering too much. If it's dry, not enough. Humidity trays can help retain moisture in the dry, warm environments of homes during winter months.

Some indoor (tropical/subtropical) bonsai are deciduous! If their leaves drop, but the soil is wet, reducing watering as the tree may be dormant (or dead...)! You can check for life of the cambium by making a small cut or snip and seeing if the tissue is still green and living.

Bonsai Care – Pot Size

Pot size is a little tricky... so consider your goals.

- **Large trees in small pots** will dry out faster, but this also encourages finer and slower growth which is best for the late stages of bonsai development.
- **Small tree relative to pot** will hold moisture a lot longer, and produce more rapid growth, which may be ideal in the early stages of a bonsai when you're trying to grow out the tree for more branches to wire or for taper.
- **Climate** – depending on climate, deeper pots can come in handy for retaining more moisture in hot/dry climates. You'd be surprised how fast a tree can dry out in full sun and 95°F + summer days. Watering twice a day may be necessary.
- **The largest pot is the ground!** Many bonsai growers take advantage of this, obviously for outdoor bonsai only.

Bonsai Care – Overwintering

For outdoor bonsai, over-winter care is critical. My general rule of thumb for trees in a pot is to take the cold-hardiness zone you're in (5/6 in the KC metro area), and subtract one FULL zone. I consider BlackRoot Farm zone 5, so anything that can handle zone 4 or less is safe in a pot outside with minimal protection.

Protection methods

- **Protect from wind** – next to a house, near a deck or other shrubs, etc.
- **Extreme cold / roots freezing** – set the pot on the ground or concrete – something that retains heat in the dead of winter. It's also advised to surround the bonsai pot & roots with wood chips, mulch, leaves, or similar to retain a bit more heat.
- **Outdoor Evergreens/Conifers** – these require sunlight year round, but are more susceptible to winter drying. Make sure they do not dry out!
- **Outdoor Deciduous Trees**, you can place them in a unheated shed/garage as long as it stays below ~45 degrees most of the time. Deciduous trees do not require light when dormant.
- **Subtropicals** – indoors is risky, as some subtropicals require cool temps in winter, so a drafty window is best, unheated or modestly heated sunroom, etc. research specific needs as these are notoriously challenging in our climate.
- **Tropicals** – indoors in a bright window or greenhouse is your only real option during the winter.

Don't let them dry out! Can't emphasize this enough!

Learn More

Hérons Bonsai – Very pragmatic bonsai artist with decades of experience. Sort of a Blue-collar bonsai, but a great starting point for beginners.

- <https://www.hérons.co.uk/>
- <https://www.youtube.com/@HéronsBonsaiUK>

MIRAI bonsai – Very rigorous and “nerdy” bonsai artist, has a lot of very in-depth videos on bonsai care throughout the year. A great resource, but I hesitate to recommend them for beginners, as the level of detail can be intimidating.

- <https://bonsaimirai.com/>
- <https://www.youtube.com/user/BonsaiMirai>

Misc

- Cosmic bonsai – really cool abstract bonsai style created by Laurent Darrieux - <https://www.cosmicbonsai.com/>
- Bonsai Society of Portland (BSOP) has great educational materials. - <https://www.portlandbonsai.org/>
- https://minnesotabonsaisociety.org/wp-content/uploads/2017/10/beginnerbasics_small.pdf
- <http://centralfloridabonsaiclub.com/wp-content/uploads/2017/08/Beginners-Manual.pdf>

