

Activity: Propagation Goal: Cognitive Intellectual Populations: Specialized Populations

## TH Activity Plan – Hardwood Stem Cuttings

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**ACTIVITY DESCRIPTION:** Participants learn and practice propagating hardwood cutting horticultural technique. Suitable for dormant trees and shrubs. Suggested timeframes: early December through mid-February in most zones.

**THERAPEUTIC GOALS:**

**Cognitive/Intellectual:** Learn propagation techniques; follow verbal instructions re plant identification & plant morphology

**Physical:** Practice manual dexterity & visual acuity specific to this task

**Psychological/Emotional:** Practice patience; experience hope & wonder for nature's elements

**Sensory:** Use visual, tactile, auditory, possibly olfactory senses

**Social:** Master horticultural skill; teach/assist others sharing information about the plant's growth characteristics and cultural needs

**Materials**

Pruning shears  
Bucket of washing water, markers, nursery pencils, pot markers, plastic tie tape, large plastic bags, whisk broom, dustpan, compost bucket, 6" deep container, rooting medium, Gloves, wipes

Optional: rooting hormone, 1-gallon plastic pots

*Sunset Western Garden Guide* for clients to read about each plant

**STEP-BY-STEP PROCESS:**

- 1. Pre-Session Preparation:** Collect one year old stem cuttings the thickness of a pencil (minimum) from healthy, disease and pest free plants from which participants will propagate additional hardwood specimens. Do not use patented varieties. Hardwood varieties that are easy to root without rooting hormones: abelia, forsythia, rose of Sharon, fig, grape, honeysuckle, hydrangea, philadelphus, mulberry, roses, & willow. Label and bundle, storing in a plastic bag in a cool, dark place for a few days. **Prepare premoistened pine shavings, sand perlite, peat or potting soil** in a 6" deep container x 12"-18" long. Optional 1-gallon pots filled with moist perlite and peat 10:1.
2. Facilitator begins session by welcoming and describing project. Ask clients to take a few minutes to quietly look outside and notice the weather. Next, notice their plant material, how does it look, feel and possibly smell. What feelings and impressions come up about this time of the year, the plants/garden, and ourselves? Show the buds. These are the points where new growth occurs, with the potential to become a root, shoot or flower. Point out the leaf scar where last year's leaf fell away. It protected and nourished this year's dormant bud. Show where the bud scale scars are on the stem. Everything above this grew last year. All these year-old buds have potential to grow this year. Pointing out dominant buds versus adventitious buds is part of the vocational education.
3. Demonstrate making a cutting. Cut below a bud, count up 4 – 6 nodes and cut above the top bud. Cut above the top node at a 45 degree angle and below the bottom node at a straight cut. This will distinguish between the top and bottom of the cutting. Keep all your cutting pointing in the same direction. Bundle

with plastic tie tape and label the tape with the species name and date that the material was cut and stored or struck in rooting medium.

4. Bury the bundles lying flat in the moist material. Keep the cuttings in a cool, dark area. Check and keep the medium moist, but not wet.
5. If the buds have begun to notably swell or grow, they can be stuck directly in a rooting medium of 10- parts medium perlite to 1-part peat moss. Dibble a hole in the rooting medium in a 1-gallon pot and insert the lowest 2 to 3 nodes of the cutting. Six to 8 cuttings can be inserted in each pot. Set these out of direct light in a protected area.
6. Gently remove and check the cuttings in 6 to 8 weeks. Spongy white callus tissue should be forming at the base of the cutting. Once new roots begin to form treat them like bare root plants and pot up in 1-gallon pots with potting soil. Place pots in a semi shaded area until the cutting begins active growth at which point in can be placed in more direct light.

**APPLICATIONS FOR POPULATIONS:** This TH activity using sharp cutting tools may not be appropriate for all populations. It is recommended for specialized populations where there is no risk or safety concern for participants or others. With its strong educational/vocational focus on horticultural skill development, populations or individuals taking vocational horticulture training might include youth, at-risk youth, some seniors (but not people living with dementia), veterans and active military, and people with food insecurity. It may also be part of a vocational horticulture program/course at corrections facilities that have granted permission for such an activity where cutting tools will be used. Propagating hardwood cuttings may be appropriate for some people who have mental health challenges, people living with physical disabilities or medical conditions like diabetes or heart disease with prior screening and assessment of risk, functional abilities and therapeutic benefits and where the medical provider has approved of physical exertion levels.

The functional physical requirements for this therapeutic horticulture activity include pincer grip and hand strength. Measuring therapeutic outcomes can include testing of propagation knowledge (verbal or written), mastery of propagation technique and improvements in hand movements and strength.

**SAFETY CONSIDERATIONS:** Safety protocols should be covered as part of this activity. Be aware of thorns on roses, and sharp shears. Some populations may not have the strength or dexterity to cut the hardwood; assessment prior to session should occur. Prepping ahead and demonstration of this horticulture technique can provide safe and appropriate focus. If using rooting hormone, do not use with populations that may put something into their mouths.

**NOTES OR OTHER CONSIDERATIONS:** “Propagation materials should be taken from healthy, moderately vigorous stock plants growing in full sunlight. Do not use extremely rank growth with abnormally long internodes or from small, weakly growing interior shoots. Tip portions of a shoot are usually low in stored foods and should be discarded. Central and basal parts make the best cuttings. At least 2 nodes should be included in the cutting, 4 to 6 nodes are preferable. A common length is 6’ to 8’ “(Hartmann and Kester 1975). “Hardwood cuttings are taken from dormant, mature stems in late fall, winter, or early spring. Plants generally are fully dormant with no obvious signs of active growth. The wood is firm and does not bend easily. Hardwood cuttings are used most often for deciduous shrubs but can be used for narrow leaved evergreens. Examples of plants propagated at the hardwood stage include forsythia, privet, fig, grape, and spirea” (Evans & Blazich, 1999).

#### **REFERENCES/ RESOURCES:**

- Hartman, H., Kester, D., Davies, F., Geneve, R., & Wilson, S. (2017). *Hartmann & Kester’s Plant Propagation: Principles and Practices (What’s New in Trades & Technology)*. Pearson 9<sup>th</sup> edition.
- Evans, E. & Blazich, F. (1999). *Plant propagation by stem cuttings*. NC State Extension Publications.
- JC Raulston Arboretum. (2022). [Propagating plants using hardwood cuttings](#). [Youtube].

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TH Activity Plan form developed by Lesley Fleming, Susan Morgan and Kathy Brechner (2012), revised in 2023.