

Activity: Plant Care Goal: Cognitive Populations: All

## TH Activity Plan – Red Stems & Red Petioles

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**ACTIVITY DESCRIPTION:** Participants will observe & identify plants with red stems or red petioles.

**THERAPEUTIC GOALS:**

**Cognitive/Intellectual:** Strengthen observational skills; develop cognitive skills; expand horticultural knowledge

**Physical:** Increase physical exercise walking & bending; increase time outdoors for melatonin production

**Psychological/Emotional:** Expand understanding of differences (in plants & people)

**Sensory:** Strengthen visual sense observing plant parts

**Social:** Work cooperatively sharing results of activity; work cooperatively in pairs

**Materials**

Outdoor space, greenhouse, garden or plants indoors

Charts, pencils

Sample plants with red stems

Photo above: Malabar spinach;

Photo below: poinsettia petiole



**STEP-BY-STEP PROCESS:**

1. **Pre-Session Preparation:** Facilitator determines if there are red stemmed plants in greenhouse, garden, or alternatively, brings some plants to session with this attribute. Plants with labels will assist with plant identification. Print chart prior to session.
2. Facilitator begins session by showing a plant that has red stems, noting that this is not too common in the plant world. Reviewing plant parts (refer to [THAD Eating Plant Parts](#) or VanDerZanden article listed in resources), the session will focus on observing plants, particularly color of stems & petioles, and identifying plants to expand horticultural knowledge (as appropriate for age, maturity and cognitive skills of group).
3. Group begins search in a greenhouse or garden. Facilitator reviews rules, boundaries & time allotted to the task. Facilitator may choose to pair up participants or with volunteers or assistants.
4. Calling group back together, facilitator asks for participants to share their findings, encouraging discussion, positive feedback, while sharing some additional horticultural facts. Other discussion topics: use of common & botanical names to clearly identify plants, [plant parts – petioles and stems](#), accepting differences in plants & people.

**APPLICATIONS FOR POPULATIONS:** With a focus on expanding horticultural knowledge, this TH session begins with defining a plant stem as one of two structural axes of plants—the stem and the roots. The stem supports leaves,

flowers and fruits. Stems plays several roles - providing structure for the plant, transporting water, nutrients and sugars, storing food, and supporting new growth via nodes and internodes ([Britannica, n.d.](#)). Stems can be woody or soft, above or below the ground and vary greatly in plants by color, size, and diameter. Petioles,

defined as smaller, leaf-specific stalks connecting a leaf to a stem at a node (Biology Dictionary, 2017). Both can be included in this activity.

Therapeutic goals appropriate for this TH activity can be drawn from any of the five health domains depending on participants’ needs, educational/cognitive levels and availability of red stemmed plants. Younger children can participate by observing and pointing out plants with red stems, strengthening their visual sensory and observational skills. Other participants including elementary or older students, people in vocational horticulture courses (incarcerated, immigrant, intellectually disabled, master gardeners) can delve into plant identification, plant structure, and plant anomalies to expand their plant knowledge.

**SAFETY CONSIDERATIONS: Facilitators are responsible for knowing poisonous and toxic plants and plant parts.**

Do not include plants that are poisonous: pokeweed (*Phytolacca decandra*), red baneberry (*Actaea rubra*), Oregon Tea Tree (*Ceanothus sanguineus*), [poison sumac](#) (*Toxicodendron vernix*), red leaved velvet senecio (*Senecio cristobalensis*), *rhododendron racemosum*, [Virginia creeper](#) (*Parthenocissus quinquefolia*). Plants that have excessive sap should be avoided even though the activity does not involve touching plants. This may include some poinsettias.

**NOTES OR OTHER CONSIDERATIONS:** Plants with red stems are a result of protective pigments called anthocyanins. Red stems may be a result of genetics, natural responses to strong light/UV exposure, stress due to temperature or water, or deficiencies of phosphorus or magnesium. A telltale indicator of these vs genetic coloring – only some stems may be red/stressed. Red stemmed plants or plants with red petioles can be flowers, shrubs and trees.

Trees with red stems: some varieties of dogwood (*Cornus alba* ‘Ivory Halo’ Tatarian & *Cornus alba* Neon Burst), *Salix integra* ‘Hakuro-nishiki), Red-stemmed Willow (*Salix alba*), Coral Bark Maple (*Acer palmatum* ‘Sango-kaku’).

Shrubs with red stems: [Staghorn sumac](#) (not a toxic variety), spiny redberry (*Rhamnus crocea*).

Plants with red stems: Winter’s bark (*Drimys lanceolata*), Hosta ‘Red Dragon’, some [poinsettias like ‘Red Angel’](#) or Princettia Red, *Peperomia carperata* ‘Rosso’ & *Peperomia rubella*, and some coleus (*Plectranthus* sp.).

Fruits and vegetables with red stems or petioles: rhubarb (its leaves are toxic), [Swiss chard](#), [Malabar spinach](#) (*Basella alba*), Thai basil (*Ocimum basilicum* var. *thyrselflora*), okra (*Abelmoschus esculentus* ‘Alabama Red’ & ‘Red Burgundy’).

Plant Name	Red Stem or Petiole Length/Width	Plant Description	Other Plant Notes

**REFERENCES/ RESOURCES:**

Biology Dictionary. (2017). [Petiole](#). *Biologydictionary.net*.  
 Britannica. (n.d.). [Stem](#). *Britannica.com*.  
 NYBG LuEsther T. Mertz Library. (2025). [Beautiful trees and shrubs for your garden: Shrubs with colorful winter twigs](#). *Libguides.nybg.org*.  
 University of Florida IFAS Extension. (2025). [Seeing red: Fruits, herbs, and vegetables](#). *Gardeningsolutions.ifas.ufl.edu*.  
 VanDerZanden, AM. (2008). [Vegetative plant parts](#). *Oregon State University*.

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 TH Activity Plan form developed by Lesley Fleming, Susan Morgan and Kathy Brechner (2012), revised in 2026.