THAD Therapeutic Horticulture Activity Database

Activity: Plant Care Goal: Cognitive/Intellectual Populations: Youth

TH Activity Plan – Fascination with Fasciation

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Materials

Live plant specimens with fasciation, photos

Computers or phones with wifi access ACTIVITY DESCRIPTION: Participants will research fasciation, exploring this plant phenomenon, expanding their horticultural knowledge.

THERAPEUTIC GOALS:

 Cognitive/Intellectual: Expand horticultural knowledge; use intellectual stimulation for career exploration; research plants
Physical: Expand visual skills & attention to detail
Psychological/Emotional: Recognize unusual growth patterns as part of life/nature; use plants to inform human development; cultivate a sense of awe through unusual flower/plant forms
Sensory: Take self-selected sensory breaks or breaks from computer screens; engage tactile/visual senses handling plants
Social: Share facts with group; practice interpersonal skills; expand tolerance

STEP-BY-STEP PROCESS:

- 1. **Pre-Session Preparation:** Gather materials including photos of plant fasciation. If public garden or other outdoor plant-rich setting is available with <u>fasciation examples</u>, the activities can occur there.
- 2. Facilitator begins session by defining plant fasciation, using photos, & if available, live plant examples (refer to definition below).
- 3. Participants observe plant examples, determining if specimens have fasciation. Researching the "typical" growth forms of the plants, then researching fasciation, participants use reasoning skills & acquired plant knowledge to form opinions. Each participant presents a few facts about their selected plant. Discussion among group members takes place.
- 4. For some populations it may be appropriate to discuss human development & growth/disabilities using the fasciation theme.
- 5. Facilitator can suggest this topic be used as a science project or experiment, or as an introduction to horticulture career exploration.

APPLICATIONS FOR POPULATIONS: *Fascination with Plant Fasciation* has a distinct educational component with emphasis on acquiring horticultural knowledge, use of reasoning skills and career exploration. Several populations would find this relevant including youth, people undertaking career/job re-training—immigrant, incarcerated or recently released from correctional facilities, and veterans transitioning post military to agricultural/horticultural fields. This activity requires access to internet using computers or phones. Some populations may not have access to this, or be restricted in using such services. As an alternative, use library books that address fasciation. Working in pairs might address and accommodate equipment limitations.

Psychological/emotional goals can integrate human growth challenges using plant metaphors or plant growth to explore or understand the genetic (or other factors) that affect growth that may be personal to participants or provide an opportunity for expanding tolerance of others. Facilitator should be sensitive to individual's

disabilities or circumstances, be prepared for frank discussion, and have the ability to pivot discussion guiding it to positive interpretations or understanding of human growth differences. Example - oppressed communities/people who experience systemic violence or persecution, relating this to attacks of plant viroids/damage from outside influences causing physically recognizable change that continues well past the initial interaction. This TH activity can be delivered virtually, as independent study or as an in-person session.

SAFETY CONSIDERATIONS: Facilitators are responsible for knowing poisonous and toxic plants and plant parts. Avoid toxic plants (foxglove for example). Rules relating to computer and phone access and online sites should be in place prior to any research in session.

NOTES OR OTHER CONSIDERATIONS: Tracking and studying fasciation can be part of career exploration and why they <u>appeal to commercial growers</u> in addition to expanding horticultural knowledge of plant development. The topic of fasciation can be included with conversations about other examples where plants can be physically affected by internal and external factors, including witches' brooms, aster yellows, plant viruses, rose rosette, galls and burls, leaf skeletonization, mistletoe, weather/wind/environmental conditions, zigzag redbud, plant breeding for certain characteristics (bioluminescence, speckled flowers, warty squash, disease/pest resistance, higher yields in crops) and more, with desirable, undesirable, or neutral outcomes.

"Fasciation is a malformation or abnormal pattern of growth in the apical meristem (growing tip) of plants...caused by genetics, hormones, pathogens, injury, nutrient deficiency or environmental causes" (Saeed, 2023).

"Fasciation is a genetic mutation of a plant's growing tip, and it can visibly affect the stem, flowers, or fruits. It often leads to multiple extra flowers being produced on the affected stems, typically with many secondary blooms surrounding the normal, expected one.

The flowers themselves may be flattened or elongated, crushed together, or otherwise misshapen in ways which may or may not be interesting or appealing to the eye" (The Seed Collection, 2025).

"There are multiple patterns of fasciation that can be observed, including: linear fasciation (which results in the more common flattened and ribbon-shaped stems), bifurcated fasciation (when a linear fasciation splits in two to form a "Y" shape), multiradiate fasciation (where the stems split into three or more short branches, referred to as a 'witches' broom'), or the rare ring fasciation (where the growing point folds over to form a hollow shoot)" (Geneve, 1990).

Fasciation can occur on any plant, "is more frequently seen in cacti, daisies, asters, legumes, willows, and plants in the rose family (Rosaceae)... distinct examples of fascinated plants are intentionally selected for their visual appeal and interest....[including] uniquely shaped tomato varieties... or fused together strawberries" (Saeed, 2023). Well-known examples include some <u>pineapples</u> with multiple crowns, <u>zigzag redbud</u>, and fasciated cockscomb celosias (*Celosia cristata*) that looks like brain coral.

REFERENCES/ RESOURCES:

Geneve, R. (1990). Fascinated with fasciation. AHSgardening.org. Learning for Justice. (2024). Ability & disability. *Learningforjustice.com.* McGrath, D. (2023). <u>Plant geek series: Fascinating fasciation & riveting reversion.</u> Michigan State University. Saeed, A. (2023). <u>The fascinating phenomenon of fasciation.</u> *Gardenprofessors.com.* The Seed Collection. (2025). <u>Fasciation: What it is and how it can affect your plants.</u> Theseedcollection.com.

Edits were made for THAD purposes in 2025.

TH Activity Plan form developed by Lesley Fleming, Susan Morgan and Kathy Brechner (2012), revised in 2024.