

TITLE | PERENNIALS IN THE OUTDOOR CLASSROOM

CATEGORY | Garden Educator Training

SUB-CATEGORY | Outdoor Classroom Design

OVERVIEW | This document outlines a training on identifying, maintaining, propagating, and planting common perennials in an outdoor garden classroom.

.....

Training Rationale:

Perennial plants are an essential component of an outdoor garden classroom as they provide year-long opportunities for exploration, learning, and observation, add aesthetic value, and create habitat for wildlife. It's important that garden educators are familiar with the perennial plants in their outdoor classroom, feel comfortable caring for and maintaining them throughout the year, and understand how to propagate and plant new perennials.

Suggested Time of Year:

Early fall or a region-appropriate time for pruning, propagating, and/or planting perennial plants

Suggested Workshop Length:

3-4 hours or separated into two shorter trainings with an opportunity to review pruning techniques again later in the year

Training Objective:

Garden educators will identify common perennials in outdoor classrooms, review basic perennial maintenance, and learn how to propagate and plant their own perennials.

Training Overview:

This training is most effective when hosted in an established outdoor garden classroom with a majority of the Top 10 infrastructure (see *Building Your Outdoor Classroom: The Top 10* in the Table of Contents) already in place, especially a perennial/exploration area.

This training should introduce garden educators to common perennials in an outdoor classroom, ongoing perennial care, and skills for propagating and planting perennial plants. Because common perennials, perennial maintenance, and ideal planting times will vary by region, it is important that the facilitator(s) of this training have knowledge of the local area. The trainer(s) should choose topics appropriate and relevant for the educators' location and prior knowledge and determine how deep to go while discussing a topic.

.....

Much of the content in this training overview comes from various gardening books, online resources, and local educational gardens and classes. It is recommended that trainers utilize local and regional resources and partner organizations to support horticultural trainings. See **Additional Training Resources** at the end of this document for a list of resources and organizations that were helpful to Education Outside.

Topics and questions to cover during the training:

Common Perennials

- What are perennials and why are they beneficial to school gardens?
- What common perennials do we see in our area and how can they be used effectively in a school garden?
 - Examples: Which perennials have edible plant parts? Which perennials are native or provide native pollinator habitats or attract local fauna? Which perennials can stimulate the senses (texture, smells, etc.)?
 - See the activity section below for some plant guide examples.
- What perennials should not be added to a school garden?
 - Examples: Are there ornamental perennials in your area that are toxic if consumed? Are there invasive species to avoid?
- What major factors affect perennial viability? What are the existing sun, soil, and water conditions in the outdoor classroom that help or hinder the success of perennial plants?
- How does the regional climate affect perennial plants?
 - Examples: When are plants typically dormant? When does the rainy season start? What are the average chill hours (if working with fruit trees)?

Perennial Care

- What are the best practices for pruning perennials throughout the year?
 - The “4 Ds” (dead, dying, diseased, damaged) and the “3 Cs” (crossing, competing, crowded)
 - Categories for pruning (crown-rejuvenation, base-cleaning, budding back)
 - Hard prune timing and prune amount depending on the plant and the season
- What are the five different techniques for pruning?
 - Thinning
 - Heading
 - Shearing
 - Pinching
 - Dead heading
- Where and how are certain pruning cuts made?
- What are the best tools to use for pruning, when is the appropriate time to use them, and how are the tools cared for?
- How much water do the common perennials in school gardens need throughout the year? What are the different needs between young and established perennials?
- When and how does the soil around common perennials need to be amended?
- What are some common characteristics of an unhealthy perennial?

Perennial Propagation

- What does propagation mean and what are the primary methods for propagating plants by hand?
 - Plant reproduction through seeding
 - Cuttings
 - Divisions
 - Layering
- How do you choose the proper method for propagating a plant, ideal season, and correct plant material? What are the intended results?

- What are the easiest/most successful perennials to propagate that are commonly found in school gardens?
- When is a propagated plant ready to be transplanted?

Perennials Planting

- When is the best time of year to plant perennials?
- How established should a perennial be before transplanting from a pot?
- What are the best practices for planting perennials?
 - Right plant, right place (determining location based on sun, soil, water availability and plant needs)
 - Special considerations based on region/microclimates/sun exposure
 - Planting process: dig a hole, assess drainage, amend, place plant at crown level, backfill, tamp, water.
- What are other factors to consider when planting perennials?
 - Rodents and plant protection (gopher wire)
 - Spacing and planning for the mature plant
 - Irrigation systems/programs

This list is not exhaustive of all perennial gardening topics, but it covers the information most relevant to garden educators. For example, this training does not cover fruit tree care. If educators have fruit trees, it will benefit them to attend an additional training specific to fruit tree care.

Activity Ideas:

- Stake out various perennials in an outdoor classroom and have garden educators rotate through each while determining the sun exposure throughout the year, the water sources, and the soil quality. Have them look up the appropriateness of each plant for its place by referencing local gardening books.
- Use regional planting guides while touring an outdoor garden classroom and practice identifying common perennials. See below for some planting guides specific to the Bay Area.
 - **Large perennial shrubs**
 - **Shade tolerant plants**
 - **Ground cover plants**
 - **Five senses garden**
- Develop a list of common perennials for your region. Create a chart and include: common and botanical names, varieties, size, bloom time, common uses, and pruning/care tips. Pre-fill some of the information while leaving some blank (the trainer should have experience and knowledge with these common perennials). During a tour of an outdoor garden classroom, have educators use the chart to take notes in the blank areas. Leave space at the bottom of the chart for educators to add information about perennials specific to their own outdoor garden classroom.
 - **See this example for Bay Area school gardens**
- While touring the outdoor garden classroom's perennials, discuss the pruning techniques and/or the propagation methods best suited for those plants. Have educators then rotate to each plant while practicing the correct technique. (Trainer should provide materials for plant propagation if they want educators to leave with plants.)
- Create a tool cleaning and sharpening station and have educators bring tools they need to clean/sharpen and practice using. (Trainer should provide materials.)
- Have educators plan a small planting project. How can they make a small space fun and engaging for students?
 - Examples:
 - **Five senses garden**
 - Zoo garden
 - Plants named after animals, such as: lion's tail (*Leonotis leonurus*), lamb's ear (*Stachys byzantina*), and tiger lily (*Lilium lancifolium*)
 - Herb garden
 - Various fragrant or edible herbs

- Pizza bed
 - Plants that are used to make pizza, such as: tomatoes, basil, oregano, and wheat
- Herbal tea bed
 - Plants that can be added to hot water to make “garden tea,” such as: lemon balm, various mints, and chamomile
- Native/drought tolerant garden
 - Plants that can be seen throughout the region and/or plants with indigenous purposes to share with students. Provide informational signage for visitors.
- Pollinator garden
 - Plants that attract local butterflies, bees, and birds
- Have garden educators plan a lesson that includes students in the care of the perennials in the outdoor classroom. How will they set expectations, use tools, and group students?
 - Example: deadheading flowers with scissors is an easy activity, and can be used for nature art afterward.
- Have garden educators brainstorm perennial plant activities to do with students, along with their age appropriateness. See additional ideas in *Back Pocket Activities, Art Projects & Celebrations, and Icebreakers* in the Table of Contents.
 - Flax weaving
 - Flower/leaf bling bracelets/boutonnieres (using painters tape, with the sticky side out)
 - Fairy houses/habitat building
 - Nectar tasting/flower eating
 - Herb bundles/bouquets
 - Flower tattoos
 - Boat building
 - And more...

Assessing Understanding:

- Exit ticket:
 - Have educators share, with a partner or group, three important things to remember about perennial care.
 - Have educators share the 4 Ds of pruning or the five pruning techniques.
 - Have educators share the steps they would take to learn about an unfamiliar perennial in their outdoor garden classroom.

Additional Training Resources:

- Appel, G. (1982). *The Growing classroom: A living laboratory science and nutrition curriculum for 2nd through 6th grades*. Santa Cruz, CA: Life Lab Science Program.

Bay Area-Specific Resources:

- Harlow, N., & Coate, B. D. (2004). *Plants and landscapes for summer-dry climates of the San Francisco Bay region*. Oakland, CA: East Bay Municipal Utility District.
- Hill, L., & Sears, E. (1998). *Pruning made easy*. London: Storey Communications.
- Peirce, P. (2010). *Golden Gate Gardening: The complete guide to year-round food gardening in the San Francisco Bay area and coastal California*. Seattle, WA: Sasquatch Books.
- *Sunset Western Garden Book*. (1995). Menlo Park, CA: Sunset Pub.
- Garden for the Environment: <https://www.gardenfortheenvironment.org/>
- San Francisco Botanical Garden: <https://www.sfbg.org/>

Large Perennial Shrubs



..... Copper Canyon Daisy *Tagetes lemmonii*



California Lilac *Ceanothus*



..... Jerusalem Sage *Phlomis fruticosa*



..... Mexican Sage *Salvia mexicana*



..... Pineapple Sage *Salvia elegans*



..... Rose Geranium *Pelargonium graveolens*

Princess Flower *Tibouchina semidecandra*.....



..... Chinese Fringe Flower *Loropetalum chinense rubrum*



Lion's Tail *Leonotis leonurus*



New Zealand Tea Tree *Leptospermum scoparium*.....



..... Pineapple Sage *Salvia elegans*



Princess Flower *Tibouchina semidecandra*.....

Shade-Tolerant Plants



Blue Fox Tail Agave *Agave attenuata* 'Nova'

A large rosette succulent that forms a large cluster 4 to 5 feet tall by about twice as wide. The wide blue gray pliable leaves lack any teeth along the margins and emerge from a tight central spear to arch gracefully back, looking like large open gray-blue flower.



Creeping Raspberry *Rubus pentalobus*

The creeping raspberry is a low-growing ground cover with deep green, semi-evergreen leaves and bright white flowers. Use creeping raspberry in rock gardens or to fill in among taller flowers in decorative planters.



Kangaroo Paw *Anigozanthos 'Big Red'*

An evergreen perennial with fuzzy rich red flowers that look like claws that rise high above the iris-like foliage from spring through fall (nearly year round along coast). Grows 4-6 feet tall and 2-3 feet wide.



Native Strawberry *Fragaria chiloensis*

A superb evergreen ground cover, Coastal Strawberry does well in sun or partial shade. It spreads by runners to form low, compact mats, 6 - 12" high. The leaves are leathery with red tints in winter. Large white flowers in the spring are followed by delectable berries.



Shasta Daisy *Leucanthemum x superbum*

Shasta daisies tend to bloom in clumps from 2 to 3 feet tall and 1 to 2 feet wide. They bear all-white daisy petals, yellow disk florets, and contrasting glossy, dark green leaves.



Silver Shield *Plectranthus argentatus*

Large velvety gray succulent leaves make the show. Gets to 3 feet tall by 6' across. It prefers some shade and can take dark shade. Not too much water is required. Brings a great light to dark spaces.



Society Garlic *Agapanthus (Tulbaghia violacea)*

This easy-to-grow perennial produces colorful globes of blue or white trumpet-shape flowers in summer and fall. Its evergreen strappy leaves add texture to beds, borders, and containers.

Ground Cover Plants



Blue Fescue *Festuca glauca*

One of the most versatile ornamental grasses, blue fescue can be used in many different ways. Plant it at the base of leggy shrubs or tall perennials to help them blend with the landscape and offset the other plant's flowers or foliage. Plant in masses as a groundcover or in rows as an edging plant. Use as an accent in a rock garden or flower border. It even looks fabulous in containers!



Flat Ceanothus *Ceanothus hearstiorum*

Ceanothus hearstiorum has small, soft, dark green leaves and flowers are blue and show up in late spring. A flat Ceanothus, no higher than 2-3 inches. Needs part shade in the interior and some summer water. When this plant is happy it is one of the best looking groundcovers I have ever seen. It loves adobe soil. It is not so good in beach sand.



Fleece Flower *Persicaria affinis*

Persicaria affinis is an evergreen perennial with a mat-forming habit. Its foliage is narrowly elliptic and dark green in colour, turning bronze in winter. In late summer to autumn it bears dense spikes of small, funnel shaped, rose red flowers which are up to 10cm above the foliage.



Lamb's Ear *Stachys byzantina*

Lamb's Ear works well when filling an area of your landscape and as a border perennial, with pink-purple flower spikes during the summer season. The foliage provides striking silvery color and velvety soft textural qualities.



Plumbago *Ceratistigma plumbaginoides*

Plumbago (also commonly called leadwort) is a wiry, mat-forming perennial which spreads by rhizomes to form an attractive ground cover. Typically grows 6-10" tall on generally erect stems rising from the rhizomes.



Slender Sedge *Carex praegracilis*

Nice evergreen sedge for moist location. Spreads by underground roots. Tough and easy to grow. Very happy in clay hardpan soils.

Yarrow *Achillea millefolium californica*

Plant in the spring in well-drained, average to poor soil. Yarrows thrive in hot, dry conditions; they will not tolerate wet soil.

Five Senses Garden

Sight

Everthing!
Sunflowers
Chinese Fringe Flower
Lion's Tail
Jerusalem Sage
California Poppies
Hen and chick



Sound

Grasses
Bamboo
Poppy pods
Lupine
Wind Chimes
Water features
Sound features



Touch

Mint geranium (fuzzy)
Succulents (smooth)
Soft-spiked cactus
Chamomile (soft)
Mexican Sage (fuzzy)
Lamb's Ear (fuzzy, soft)
Artichoke Flowers
Lion's Tail
Ceanothus (soap!)



Smell

Lemon verbena
Lemon balm
Pineapple sage
Sweet pea
Peppermint
Spearmint
Lime mint
Lavender
Thyme
Rosemary



Taste

Sorrel (sour)
Snap peas (sweet)
Fava beans
Honeysuckle (sweet)
Tree strawberry (sweet)
Borage (edible flowers)
Nasturtium (edible)
Mint








Essential Bay Area School Garden Vegetables





Plant Type	Direct Seed or Transplant?	Spacing	Time (West)	Time (East)
Radishes	S	~3"	Any time	Any time
Fava beans	S	~8-10"	Any time	Any time before Apr
Onions	T	~3" (harvest as green onions)	Any time	Any time
Peas	S	~3-4"	Any time, avoid Dec/Jan	Any time before Apr, avoid Dec/Jan
Leaf Lettuce	S/T	~7-9"	Any time	Any time
Head Lettuce	S/T	~10-12"	Any time	Any time
Kale	T	~12"	Sept, Feb-Summer	Sept, Feb-Summer
Collard Greens	T	~12"	Sept, Feb-Summer	Sept-Oct, Feb-Summer
Mustard Greens	T	~8-12"	Any time, avoid Nov-Dec	Aug-Oct, Jan-Apr
Swiss Chard	S/T	~10"	Dec/Jan (S); After winter break (T)	Dec/Jan (S); After winter break (T)
Leeks	T	~6"	After winter break	Feb-Apr
Turnips	S	~4-6" (closer if just harvesting greens)	After winter break	Feb-Summer
Carrots	S	~3"	Feb-Summer	After winter break
Beets	S	~6"	Feb-Summer	Feb-Summer

Essential Bay Area School Garden Herbs

Plant Type	Annual/ Perennial	Good For	How to Obtain
Sorrel	Perennial	Nibbling year-round; Cooking	Nursery
Chives	Perennial	Cooking, Scent	Nursery, Division
Lavender	Perennial	Edible flowers, Cooking, Tea, Scent	Nursery, Division, Stem Cuttings
Lemon balm	Perennial	Tea, Scent	Nursery, Division
Mint	Perennial	Tea, Scent	Nursery, Rooted runners (It spreads! Good in a container!)
Rosemary	Perennial	Cooking, Scent	Nursery, Cuttings
Pineapple sage	Perennial	Edible flowers, Scent, Attracting hummingbirds	Nursery, Stem Cuttings
Lemon verbena	Shrub	Tea, Scent	Nursery, Stem Cuttings
Borage	Annual	Edible flowers, Attracting bees	Seed





Perennials For SF Bay Area School Gardens



Name	Varieties/ Size	Bloom Time	Good For...	Pruning/Care Tips
<p>Copper Canyon Daisy (<i>Tagetes lemmonii</i>)</p> 	<p>3-6' x 4-6'</p>	<p>Year-Round</p>	<ul style="list-style-type: none"> • Strong scent • Year-round flowers 	<ul style="list-style-type: none"> • Will get quite large, especially if located near additional water/fertilizer.
<p>Ceanothus (<i>Ceanothus</i>)</p> 	<p>Many varieties and sizes, groundcover to large shrub.</p> <p><i>C. arboreus</i>, ~15' x 10' <i>C. hearstiorum</i>, 6" x 8'</p>	<p>Spring</p>	<ul style="list-style-type: none"> • Flowers for soap-making • Attracts bees • 	<ul style="list-style-type: none"> • No additional water or fertilizer once established.
<p>Jerusalem Sage (<i>Phlomis fruticosa</i>)</p> 	<p>4' x 6'</p>	<p>Spring</p>	<ul style="list-style-type: none"> • Flowers for nectar tasting • Fuzzy leaves 	
<p>Lion's Tail (<i>Leonotis leonurus</i>)</p> 	<p>4-6' x 4-6'</p>	<p>Fall</p>	<ul style="list-style-type: none"> • Flowers at the beginning of the school year 	<ul style="list-style-type: none"> • Cut back to the ground after it has finished blooming in late fall. • Root ball will grow every year and may need root pruning.
<p>Lavender (<i>Lavndula</i>)</p> 	<p>Many varieties, including:</p> <p>English (<i>L. angustifolia</i>) 1-2' x 2-3' French (<i>L. dentata</i>) 3-4' x 4-6' Spanish (<i>L. stoechas</i>) 3' x 2-3'</p>	<p>Spring/ Summer</p>	<ul style="list-style-type: none"> • Herb bundles • Cooking activities 	<ul style="list-style-type: none"> • Cut back by ½ in winter to prevent from getting woody

Name	Varieties/ Size	Bloom Time	Good For...	Pruning/Care Tips
Mexican Sage (<i>Salvia leucantha</i>) 	3-4' x 3-4' ----- ----- <i>These are just two of many salvias- others include:</i>	Year-round if cut back	<ul style="list-style-type: none"> • Year-round flowers 	<ul style="list-style-type: none"> • Spreads easily • Cut back to the ground after blooming to promote flower growth
Pineapple Sage (<i>Salvia elegans</i>) 	<ul style="list-style-type: none"> • White Sage (<i>S. apiana</i>) • Bee's Bliss Salvia (<i>S. leucophylla</i>) ----- ----- 3-4' x 3-4'	Year-round	<ul style="list-style-type: none"> • Attracts hummingbirds • Nectar tasting • Scented leaves 	
Rose Geranium (<i>Pelargonium graveolens</i>) 	~2'x1' ----- ----- <i>These are just two of many scented geraniums</i>		<ul style="list-style-type: none"> • Scented leaves 	
Peppermint Geranium (<i>Pelargonium tomentosum</i>) 	----- ----- ~1-3' x 1-3'		<ul style="list-style-type: none"> • Scented fuzzy leaves 	
Sweet pea shrub (<i>Polygala dalmaisiana</i>)	3-5' x 4-6'	Year-round	<ul style="list-style-type: none"> • Year-round flowers, example of seed "exploders". • NOT edible 	











--	--	--	--	--

Name	Varieties/ Size	Bloom Time	Good For...	Pruning/Care Tips
Sticky Monkey Flower (<i>Mimulus aurantiacus</i>) 	3-4' x 3-4'	Spring/ Summer	<ul style="list-style-type: none"> • Sticky leaves- can make dirt "tattoos" • Attract hummingbirds 	
Princess Flower (<i>Tibouchina semidecandra</i>) 	5-15' x 3-10'	Winter/ Spring	<ul style="list-style-type: none"> • Showy flowers 	
New Zeland Flax (<i>Phormium</i>) 	Many sizes and varieties- can get quite large. <i>P. tenax</i> 'Tom Thumb' & Tiny Tiger are both on the smaller size (~2' x 2')		<ul style="list-style-type: none"> • Weaving crafts (bracelets, bookmarks, etc.) 	
Hummingbird fuchsia (<i>Epilobium canum</i>) 	1-2' x 2-3'	Summer/ Fall	<ul style="list-style-type: none"> • Attract hummingbirds 	
Tree aloe (<i>Aloe arborescens</i>)	6-8' x 5-6'	Winter	<ul style="list-style-type: none"> • Providing a barrier 	

				
<p>Devil's Bush (<i>Leucadendron salignum</i>)</p> 	3-5' x 3-6'	Winter	<ul style="list-style-type: none"> • Slow growing but beautiful red foliage- fun to add to flower bouquets 	<ul style="list-style-type: none"> • Very sensitive to additional water or fertilizer once established

Name	Varieties/ Size	Bloom Time	Good For...	Pruning/Care Tips

Others Drought-Hardy Plants to Consider:

<p><i>Hebe variagata</i></p> 	<p>New Zealand Iris (<i>Libertia peregrinans</i>)</p> 	<p>Green smoke bush (<i>Cotinus coggygria</i>)</p> 	<p>Red Dragon (<i>Lophomyrtus x ralphii</i>)</p> 
<p>New Zeland Tea Tree (<i>Leptospermum scoparium</i>)</p> 	<p>Chinese Fringe Flower (<i>Loropetalum chinese rubrum</i>)</p> 	<p>Red Flowering Currant (<i>Ribes sanguinium</i>)</p> 	<p>Red lantana (<i>Lantana camara</i>)</p> 
<p>Rock Rose</p>		<p>Silver Plectranthus</p>	<p>Flowering Maple</p>

(Cistus x purpureus)



(Plectranthus argentatus)



*shade tolerant!

(Abutilon)



*shade tolerant!