

SUSTAINABLE YARD TRANSFORMATION

on a Budget



PURPOSE OF THIS PRESENTATION

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- **Share the Nuts and Bolts of DIY Sustainable Landscaping and Urban Permaculture**
- **Give an overview from a homeowner's perspective of what it takes to transform a lawn into a sustainable landscape and what benefits this transformation offers our lives, communities, and world at large.**
- **Note: Though many of the resources and information that I offer in this presentation are specific to Solano County and California (where I was raised and where I did my transformation), most of the resources are supportive for anyone who wishes to install a sustainable landscape, regardless of location**





ABOUT ME

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- I have been involved in sustainable communities around the country for the last decade, including intensive volunteer work with Sustainable Solano where I filmed the 2023 Spring Season of my musical blog, *This Wonderful World*.
- I've been involved in environmental education for my whole life, beginning with Caritas Creek (the program that my family started) where I was raised as a camper, and where I worked as a counselor and site director.
- As an environmental steward, I was an intern in habitat restoration with the Putah Creek Council where I worked with various partner organizations in a wide-range of efforts to support the wellbeing of our local watershed.
- As an artist, facilitator and director, I am the creator of The Living Mirror Project, an arts organization that explores how creative reflection plays a part in peacemaking.

MY SUSTAINABLE YARD ACHIEVEMENT



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Within one year, I transformed my front yard front lawn into a native plant habitat and edible garden. I was able to do this entirely within the budget that was granted to me by the Water Efficient Rebate Program from the Solano County Water Agency



I was able to do this with **no prior**
landscaping experience
(and a very embarrassed black thumb)

ENVIRONMENT

COMMUNITY

everyone benefits

SELF

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**THE BENEFITS OF
TRANSFORMING
YOUR LAWN**

ENVIRONMENT

WATER

- Less pollution from herbicides
- Less water use (in dry areas)

AIR

- Less pollution from lawn mowers
- Significant CO2 absorption

SOIL

Nutrient rich and full of microbes

WHOLE ECOSYSTEM

Birds, critters and pollinators are taken care of
(especially by native plants)

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**THE BENEFITS OF
TRANSFORMING
YOUR LAWN**

WATER IMPACT: SAVINGS

On average:

- Lawns take 50-70 thousand gallons of water per year
- A food forest (trees, natives plants, & veggies) takes 20,000 gallons of water per year

Therefore, the transformation from lawn to food forest saves, on average, 40,000 gallons of water per year

- To get an idea of what this looks like, the average person uses 101.5 gallons of water/day or about 37,000 gallons per year, so:



The amount of water saved per year from a food forest transformation is over a year's worth of water for an individual

THE BENEFITS OF
TRANSFORMING
YOUR LAWN

COMMUNITY

BUILD RELATIONSHIPS

Sidewalk chats with neighbors
that cross cultural divides and differences

GOOD WILL GENEROSITY

- Sharing Resources
- Sharing Harvest
- Sharing Tips

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**THE BENEFITS OF
TRANSFORMING
YOUR LAWN**

SELF

MENTAL HEALTH

Meditation

Elements soothe the nervous system

The wisdom of nature

Confidence from self-reliance

PHYSICAL HEALTH

Regular exercise

Good nutrition

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**THE BENEFITS OF
TRANSFORMING
YOUR LAWN**

A HEALTHY DEBATE: **LAWNS ARE NOT THE ENEMY**

Lot's of people LOVE lawns for some very good reasons:

- They're beautiful
- They're kid and pet friendly
- They provide lots of recreational benefits

They have some environmental benefits:

- They produce a lot of oxygen
- They store carbon in the ground, unlike trees who store it in their trunks. This means that if a wildfire passes through, they don't release their CO2 into the air (like trees do)
- In areas with lots of rain, they can absorb a lot of water making them helpful in flood-control
- They help keep areas cool

Many lawn lovers are working to be more sustainable with:

- Electric mowers
- Low-water use irrigation and/or drought resistant species
- More eco-friendly herbicides (plus, not everyone agrees that herbicides are unsafe for the environment or our health)



“WHY” MATTERS: CLARIFYING YOUR PURPOSE

Do your own research, practice respectful debate & remember to love your neighbor who has a lawn.

Ultimately, I still support sustainable lawn transformations because:

- Lawns make more sense in wetter climates
- It's fulfilling to do my part in supporting the pollinator population
- My connection to the natural world deepened by getting to know native plants in my home county
- The personal joys and benefits of growing my own food are tremendous
- It supported my mental health to have an interactive yard that brought “nature” to my home

It's not a chore, it's a joy.



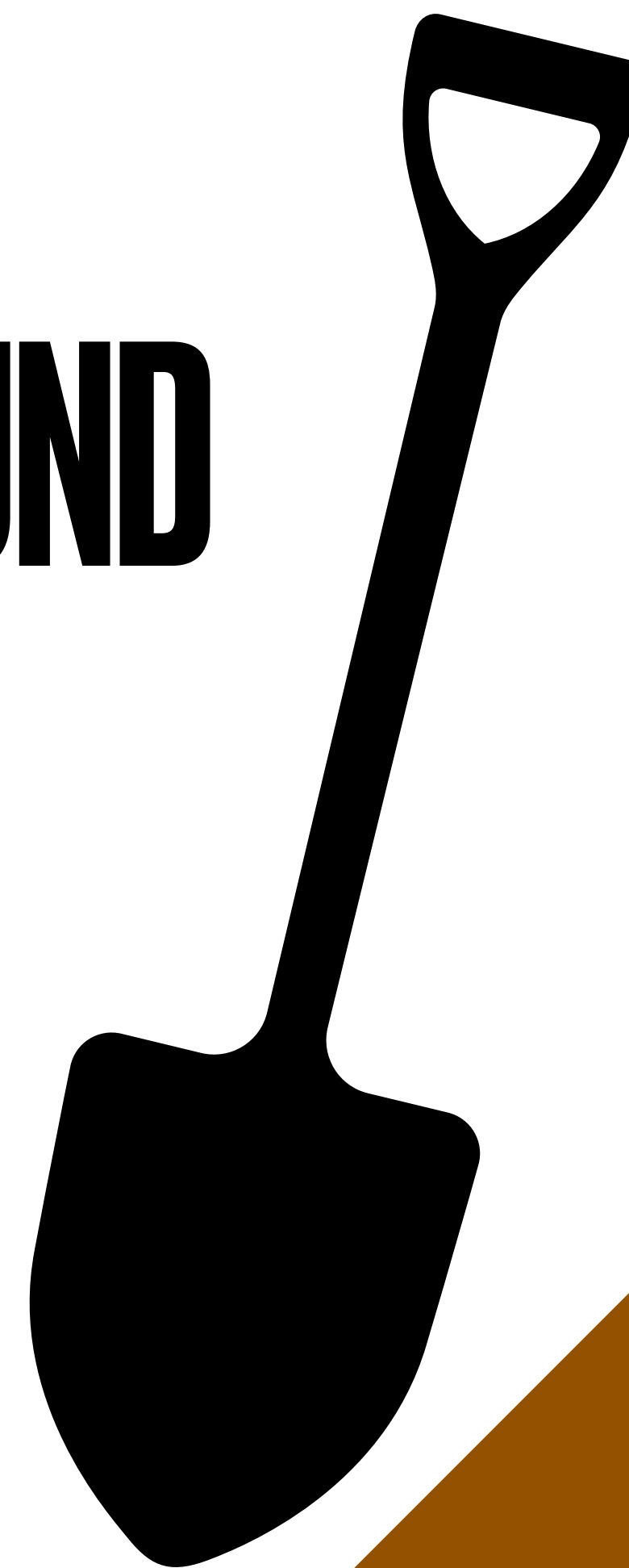
MORE SONGS & STORIES ON MY **PURPOSE**



<https://alanamirror.substack.com/p/healing-the-victorian-rose>

<https://alanamirror.substack.com/p/the-hearts-garden-of-hope>

BREAKING GROUND



THE CHALLENGES I FACED:

- Finding the best way to remove the lawn
- Cost of designer
- Know-how for self-design
- Sustainability principles
- Lack of confidence as a gardener
- Sourcing plants
- How to install plants effectively



A BROAD OVERVIEW

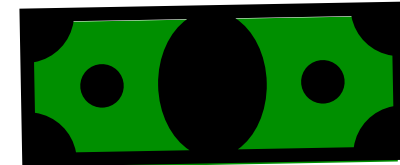
STEPS TO SUSTAINABLE YARD TRANSFORMATION



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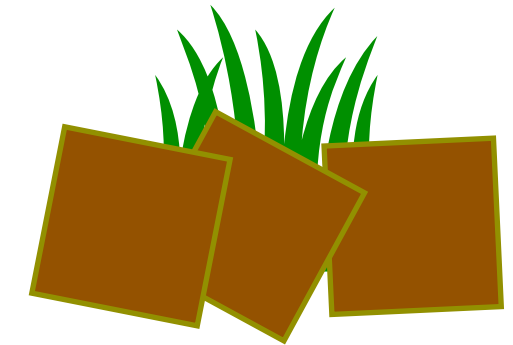
1.

Funding Your Project



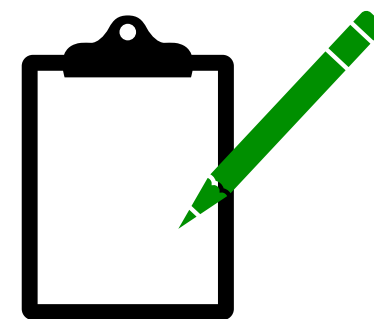
2.

Remove Your Lawn



3.

Design your new yard



4.

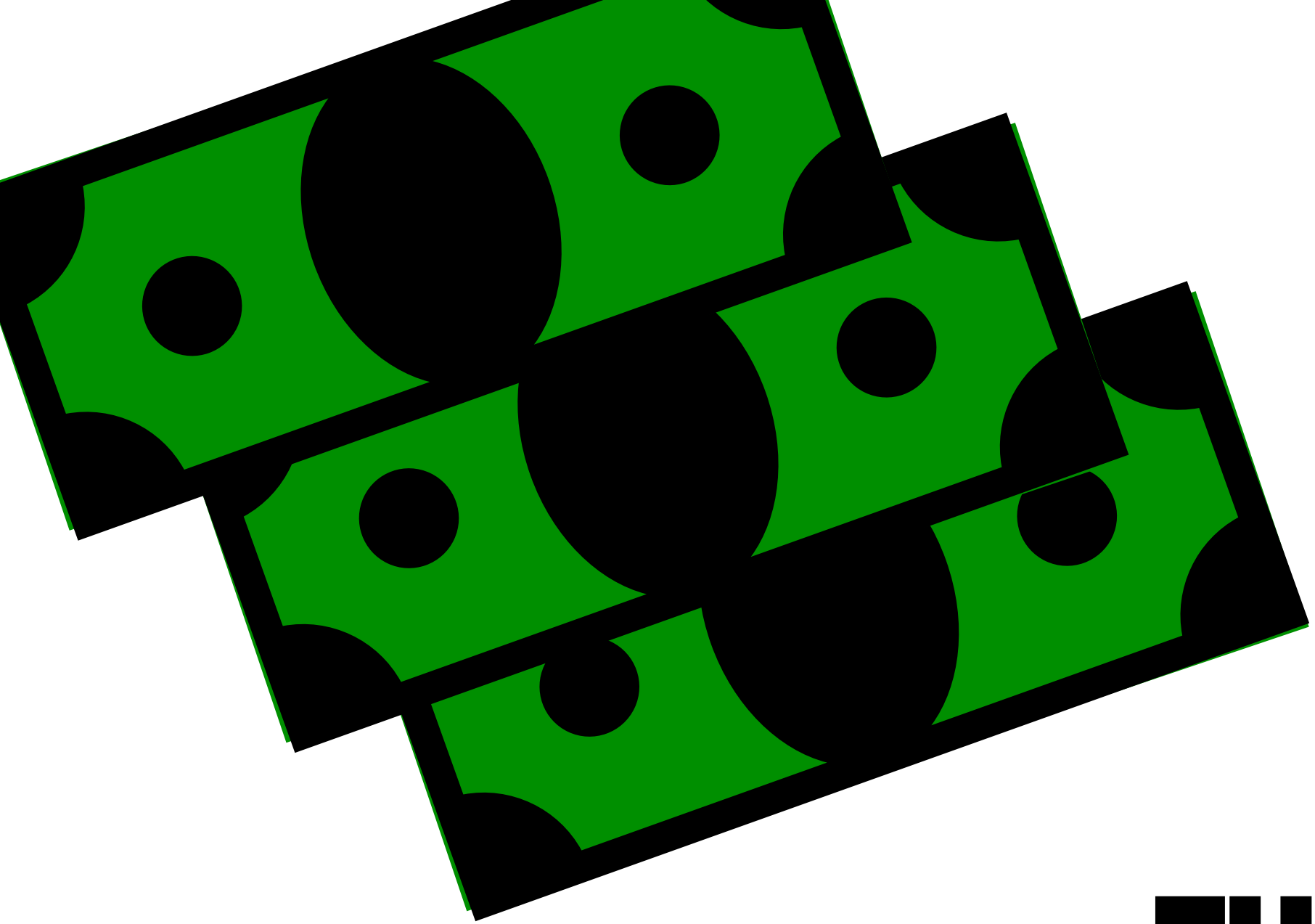
Install your design



5.

Maintain your yard





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FUNDING YOUR PROJECT

on a budget, with no debt



THE **WATER-EFFICIENT LANDSCAPE** REBATE PROGRAM

FROM THE SOLANO COUNTY WATER AGENCY



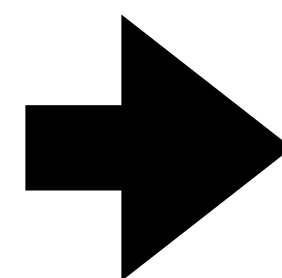
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Eligibility

- Available to Private Residents and CII Customers in Solano County
- Minimum of 300 square feet of lawn
- New construction not eligible
- NOT retroactive; you must begin the project with the program
- Renters must receive written permission from the homeowner
- Awarded on a first-come, first-serve basis

Rebate Offer

- \$1.50 per square foot of landscape converted
- Maximum \$1,500 for Single-Family Residences
- Maximum \$7,500 for Public Property
- YOU RECEIVE THE REBATE AFTER YOU COMPLETE



WEBSITE: <https://www.scwa2.com/water-efficient-landscape-rebate-program/>

THE WATER-EFFICIENT LANDSCAPE REBATE PROGRAM

FROM THE SOLANO COUNTY WATER AGENCY



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Requirements

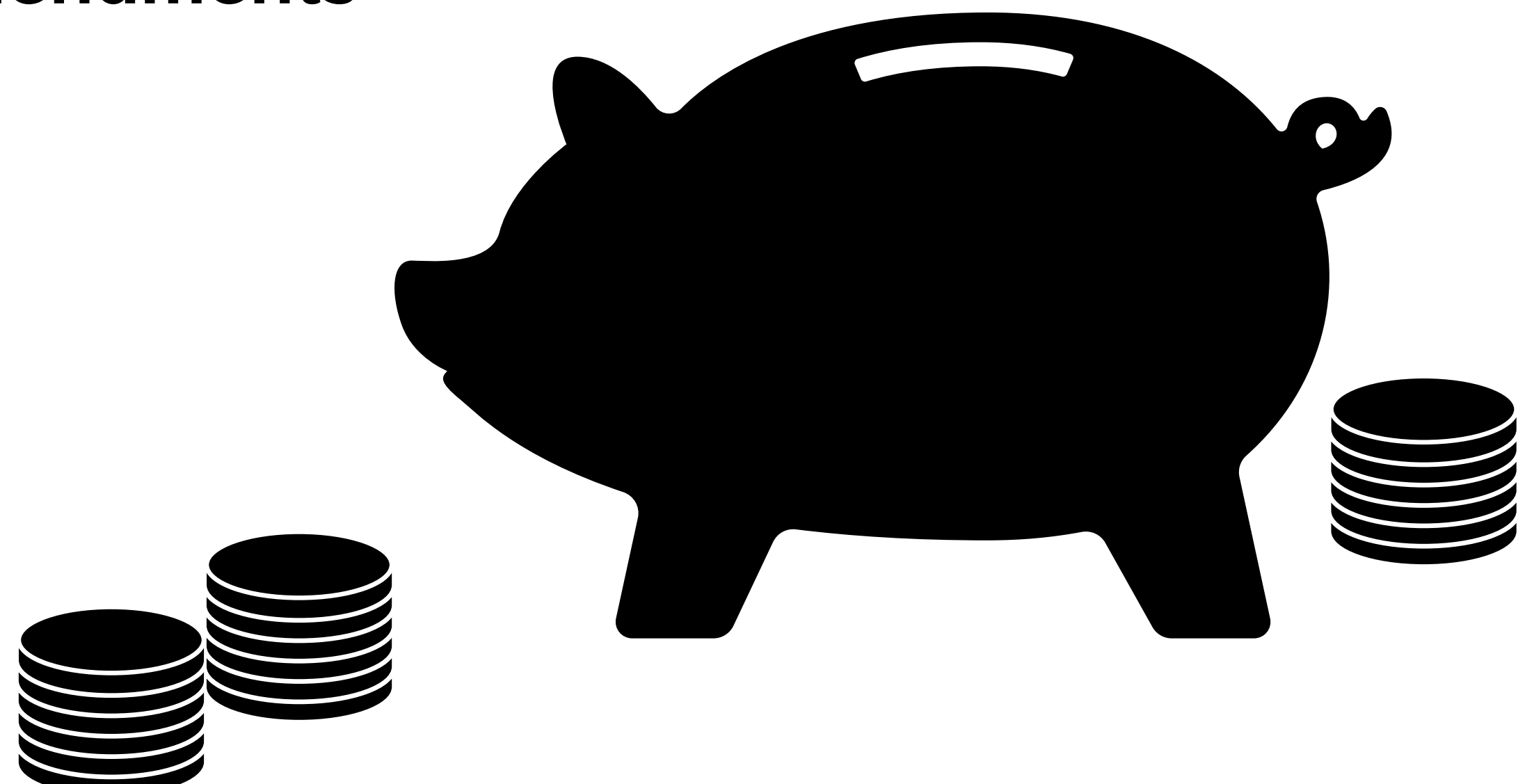
- **Must be completed within 4 months (with extension possible upon request)**
- **W-9 IRS form**
- **Drought-tolerant, non-invasive, edibles, and/or native plants**
- **Planting areas must have at least 3 inches of mulch or permeable organic material**
- **NO concrete or other impermeable material (weed mat must be biodegradable)**
- **must have 50% vegetation coverage**
- **Irrigation must be low-drip, micro-spray, bubbler or hand watered; overhead watering not allowed; must be in good working order**

WHEN YOUR DONE, CONTACT SCWA to do an assessment.

YOU WILL RECEIVE YOUR REBATE ATER THE ASSESSMENT IS COMPLETE

MY BUDGET

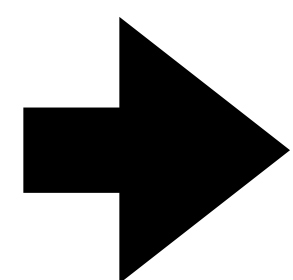
- 1,300 square feet of lawn
- \$2,000 budget
- \$1,000 for: native plants, 3 fruit trees, and planting mix
- \$700 for rock
- \$500 for containers for garden beds and bulk soil
- \$200 for 2 seasons of veggies starts and soil amendments



STEP 1:

SUSTAINABLE LAWN REMOVAL

with **SHEET MULCHING**



RESOURCE: <https://lawntogarden.org/>



WHAT IS SHEET MULCHING?

- A form of lawn or weed removal that kills the unwanted plants through loss of sunlight
- Uses a combination of cardboard and mulch to block the sun over the span of many months



WHY SHEET MULCHING?

Pros:

- Prevents the use of herbicides that pollute the water and soil
- Maintains healthy microbes in the top-soil (as opposed to sod cutters or weed mat)
- Cost-efficient (often FREE!)

Cons:

- Labor intensive (sourcing and moving the materials)
- Time Intensive (best after 6 months)



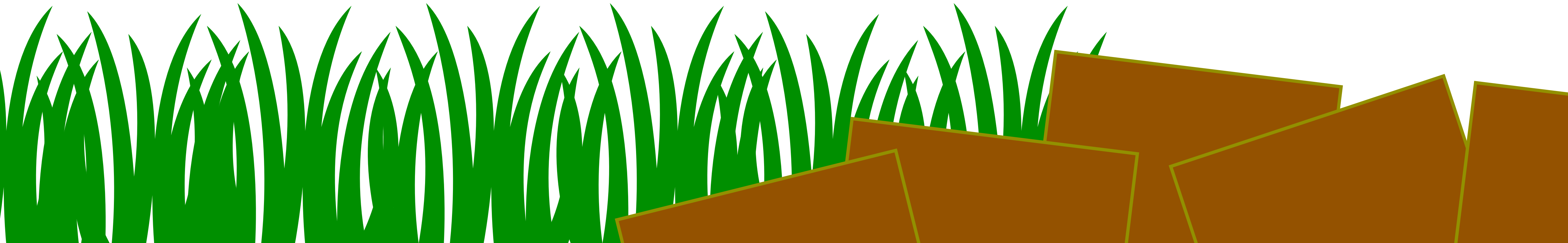
STEPS TO SHEET-MULCHING

- **Source the Cardboard**
 - Can be found for free at from many stores who happily let you take from their cardboard recycling bin
 - Prepare the cardboard by removing and stickers or tape
 - For less labor it can be bought online
 - Burlap bags (that can be found for free at coffees shops) can be used as an alternative



STEPS TO SHEET-MULCHING

- Lay the cardboard over the grass (make sure there are no gaps)
- Optional: sprinkle some soil over the cardboard
- Optional: line the boundary of your yard with rocks, bricks, or some other barrier to keep the mulch in and define the space (this can be costly, but is enormously helpful in maintaining the boundaries of your space and keeping sidewalks clean)



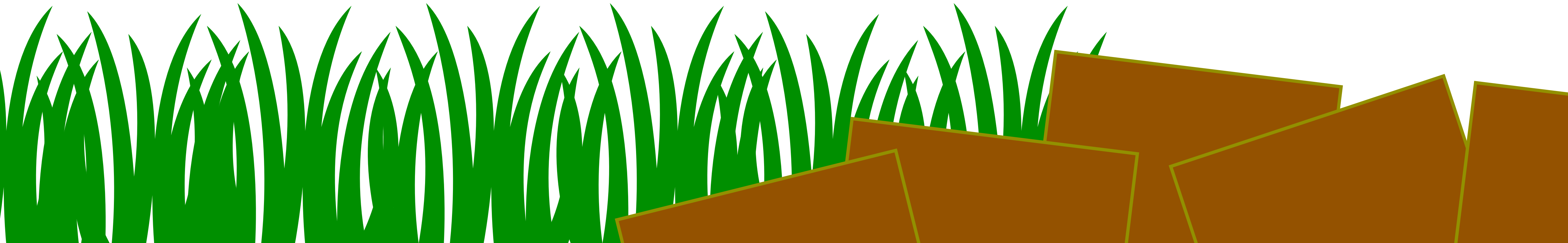
STEPS TO SHEET-MULCHING

- **Source Mulch**
 - Can be delivered for free by local arborists (who are often grateful that they don't have to pay to discard the trees they remove)
 - Make sure the wood is not allelopathic (containing chemical that prevent growth) as it may hinder your new plants from growing. Examples are: Black Walnut, Redwood, Cedar, Eucalyptus, Pine
 - Note that the delivery times can be unpredictable.
 - If you have your mulch delivered right onto your lawn (as opposed to a driveway), make sure your cardboard is set up when it is delivered
 - You can add fall leaves to the mix, but make sure the top is mulch as it is much heavier
 - Note that you generally do not have the ability to choose the color or size of the mulch if you get it for free from arborists



STEPS TO SHEET-MULCHING

- **Spread the Mulch**
 - **Depending on how much space you're covering, this can take a long time and is very labor intensive.**
 - **You'll need a wheel barrel, and pointed shovel, and some friends to help!**
 - **Your mulch should be 3-6 inches thick**

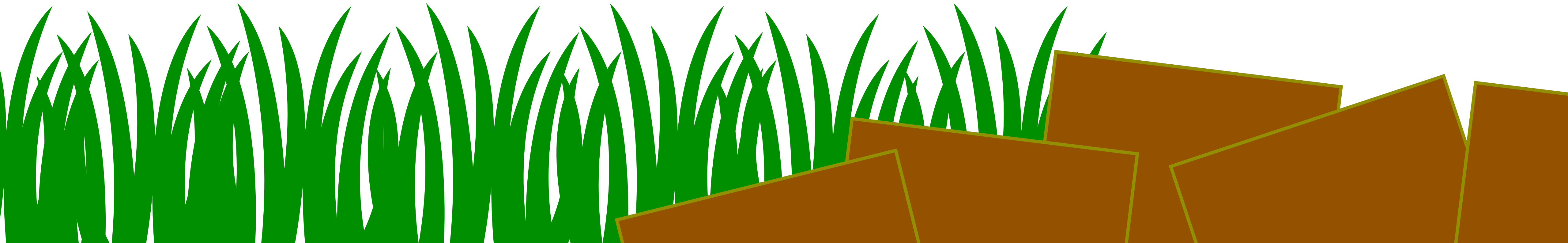


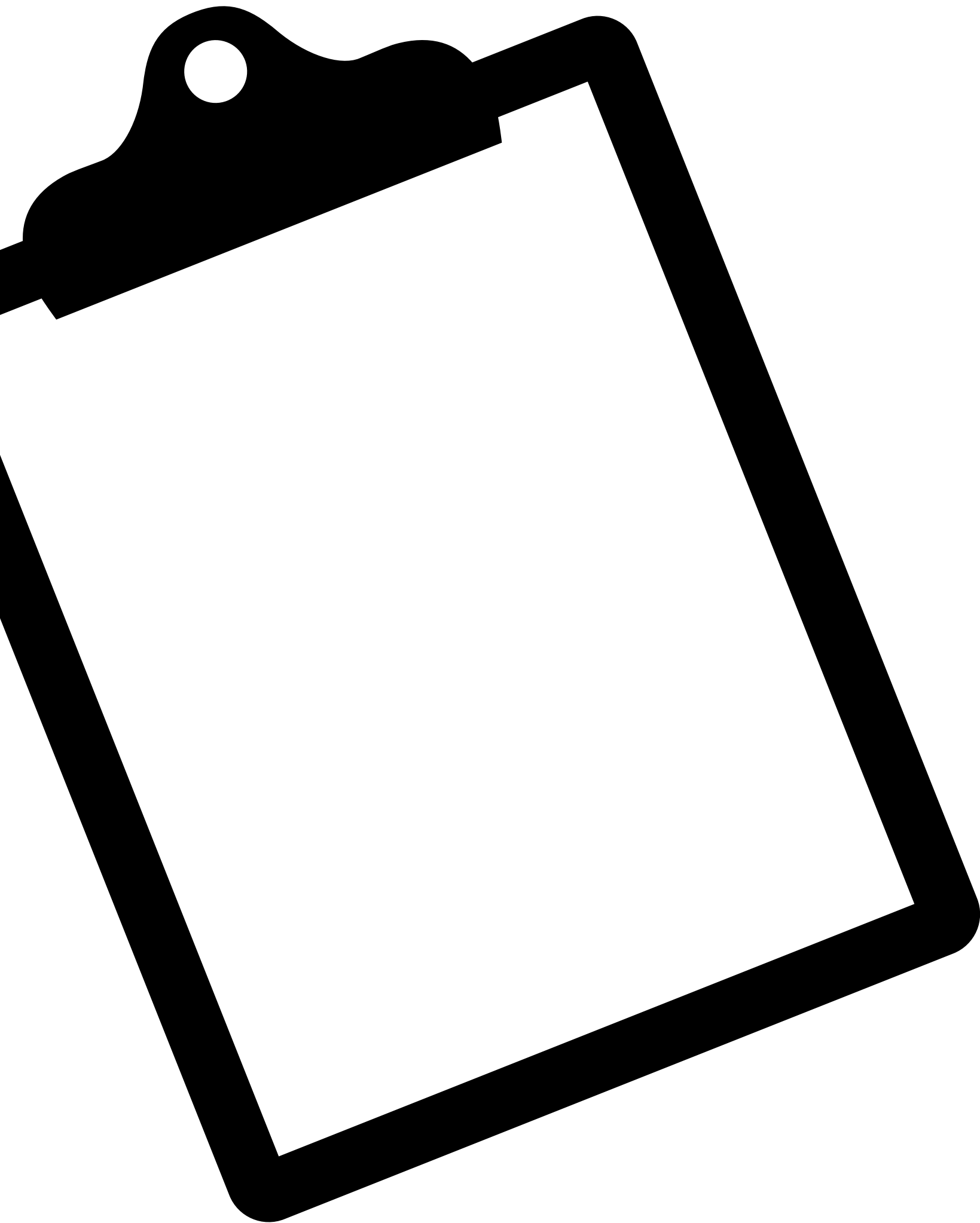
STEPS TO SHEET-MULCHING

Just wait. In 3-6 months your lawn should be dead and your cardboard should be mostly disintegrated.

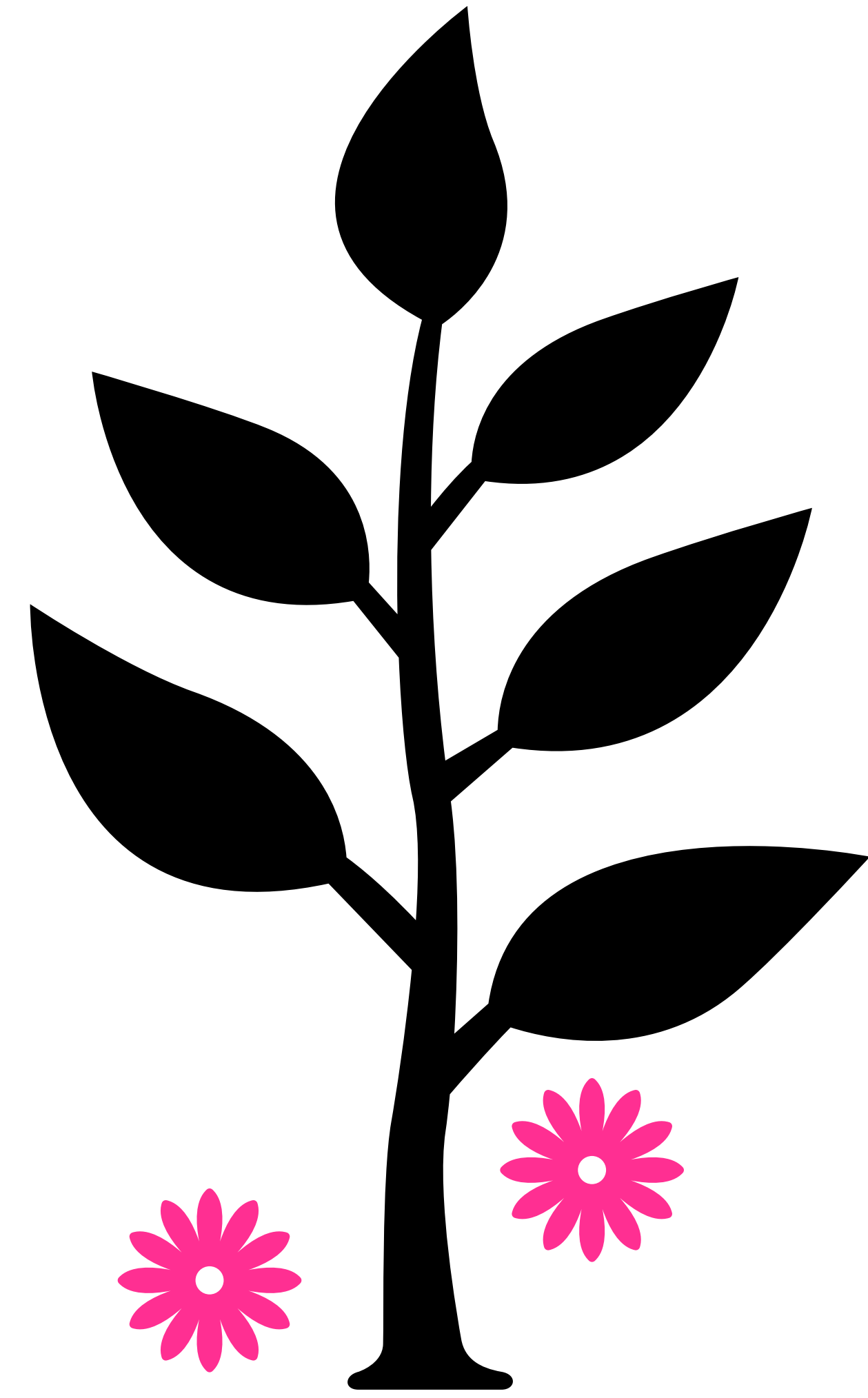
Note:

- **Crabgrass is incessant! Keep an eye out for it and pull it as soon as you can**
- **It's best to let it sit over winter when it rains**





STEP 2: DESIGN YOUR NEW YARD



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START WITH A TEMPLATE

and modify it for your needs and purposes

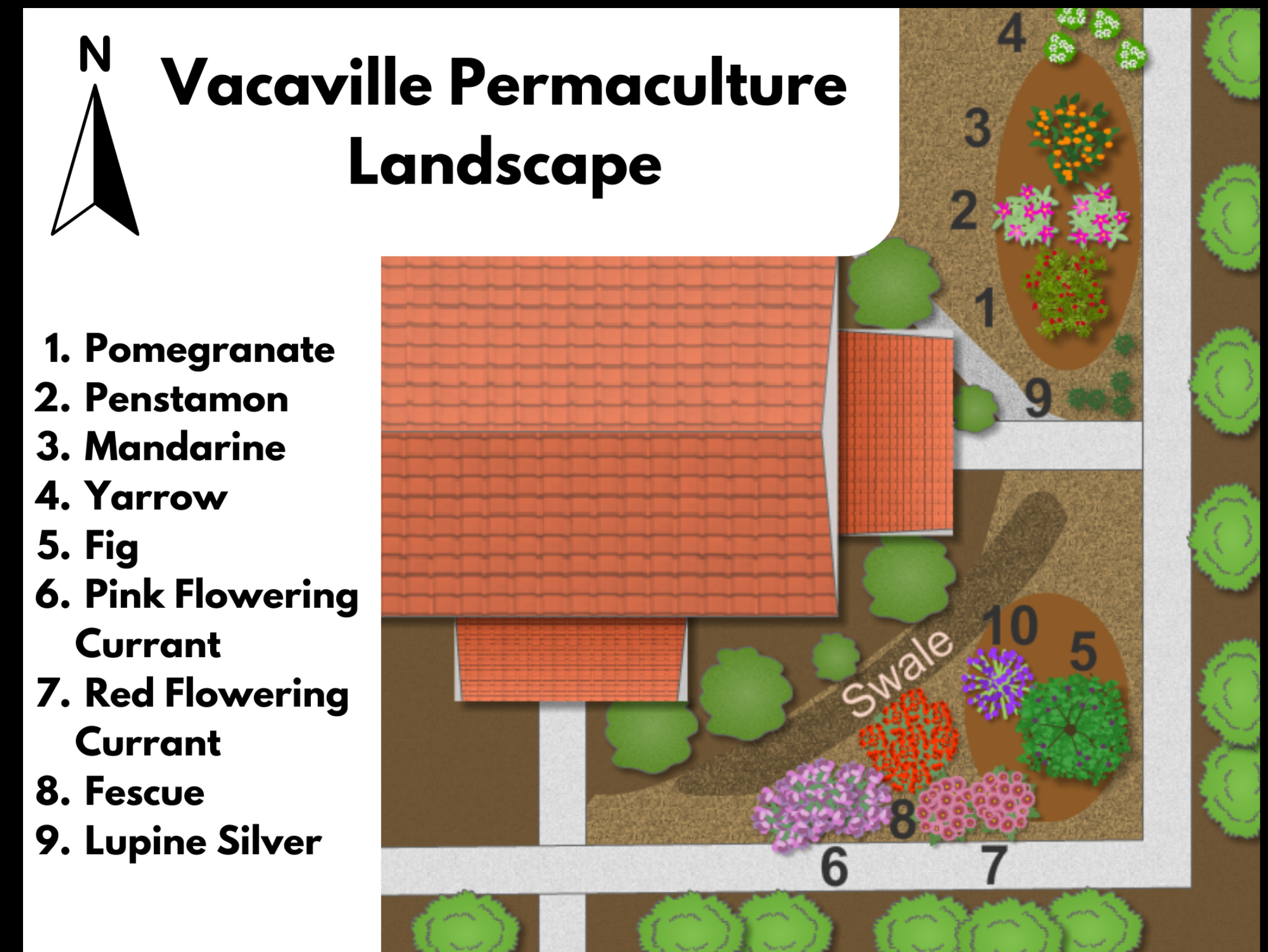
Templates offer recommended plants for:

- Shade, partial-shade, and full-sun
- Style preferences/ Aesthetics
- Supporting native pollinators
- Water-efficiency

Can be modified based on:

- Plant Availability
- Size and Shape of Property
- Desired Outcomes

SUSTAINABLE SOLANO **YARD TEMPLATE**



MORE FREE DESIGN RESOURCES

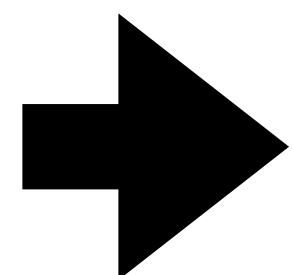


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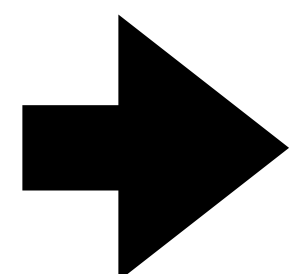
- Calscape **Garden Planner**: <https://gardenplanner.calscape.org/>
- California Native Plant Society **Habitat Revolution Garden Help**: <https://www.cnps.org/gardening/habitat-revolution>
- Bloom California Garden Inspiration **Native Plant Templates**: <https://bloomcalifornia.org/garden-inspiration/>
- UC Davis **Planting Plans** <https://arboretum.ucdavis.edu/tags/planting-plans>

NOTE: While hiring a designer can be quite expensive, many **designers also offer consultations** for a lower cost

Tip: Learn from others who've already done it



RESOURCE: <https://arboretum.ucdavis.edu/tags/lifeafterlawn>

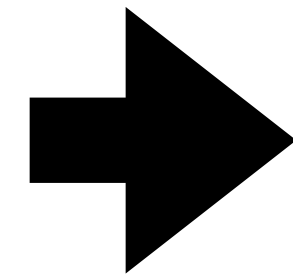


RESOURCE: <https://sustainablesolano.org/solano-sustainable-backyard/>

DESIGN APPROACHES FOR MODIFICATION

Landscape
Design

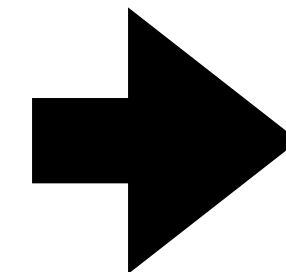
Basic Design Principles for Function and Beauty



RESOURCE: <https://www.thespruce.com/landscape-design-for-beginners-2130815>

Perma-
Culture

Sustainable Design for a Thriving Ecosystem

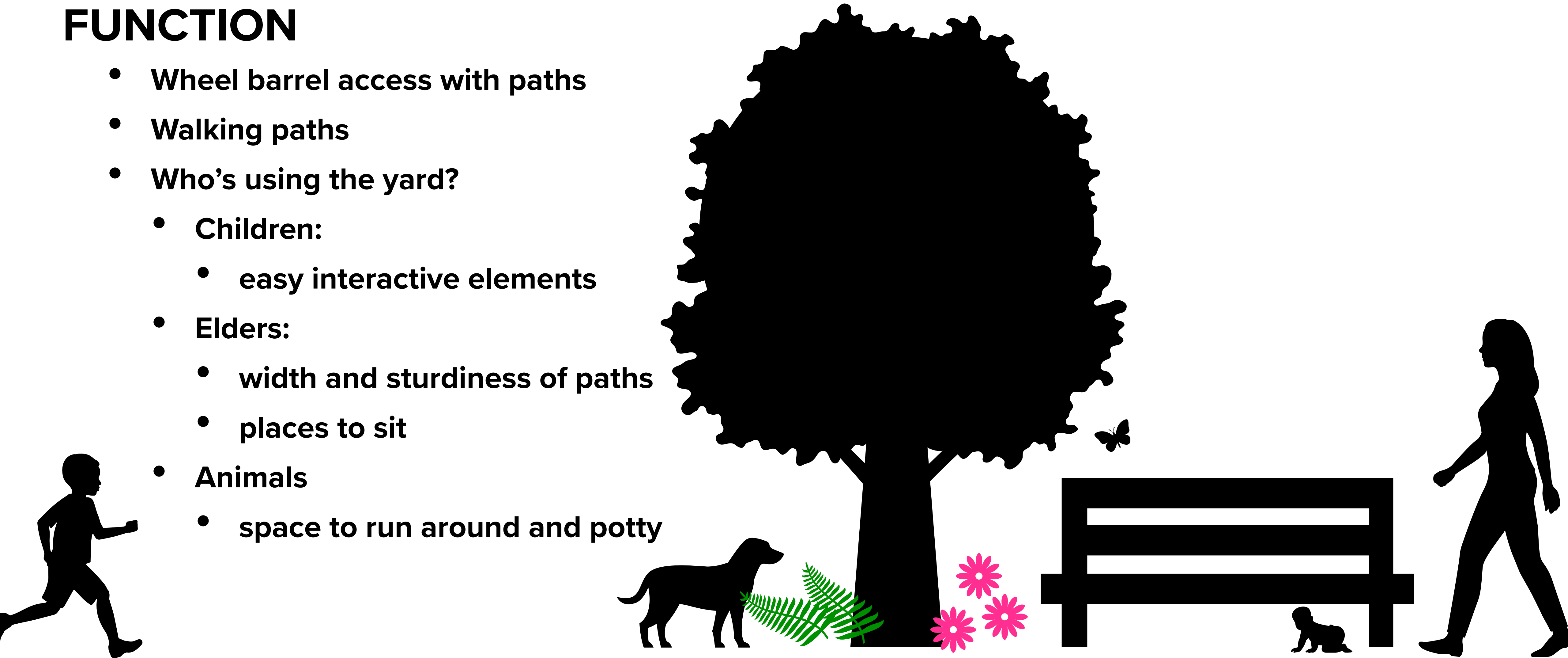


RESOURCE: Tenth Acre Farm: <https://www.tenthacrefarm.com/>

BASIC **LANDSCAPE DESIGN** PRINCIPALS

FUNCTION

- Wheel barrel access with paths
- Walking paths
- Who's using the yard?
 - Children:
 - easy interactive elements
 - Elders:
 - width and sturdiness of paths
 - places to sit
 - Animals
 - space to run around and potty



BASIC LANDSCAPE DESIGN PRINCIPALS

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AESTHETICS

Know your plants:

- Shape
- Color
- Size
- Texture
- Blooming season
- annual or perennial



➔ **RESOURCE: Calscap Native Plant Directory: <https://calscape.org/>**

➔ **VEGGIE RESOURCE: <https://squarefootgardening.org/>**

BASIC LANDSCAPE DESIGN PRINCIPALS

AESTHETICS

Contrast helps focus

- Create blocks that are large enough for the eye to see

Choose a focal point to build around

Rhythm

- Repeating patterns give movement and coherence
- Symmetry creates stillness
- Asymmetry creates movement



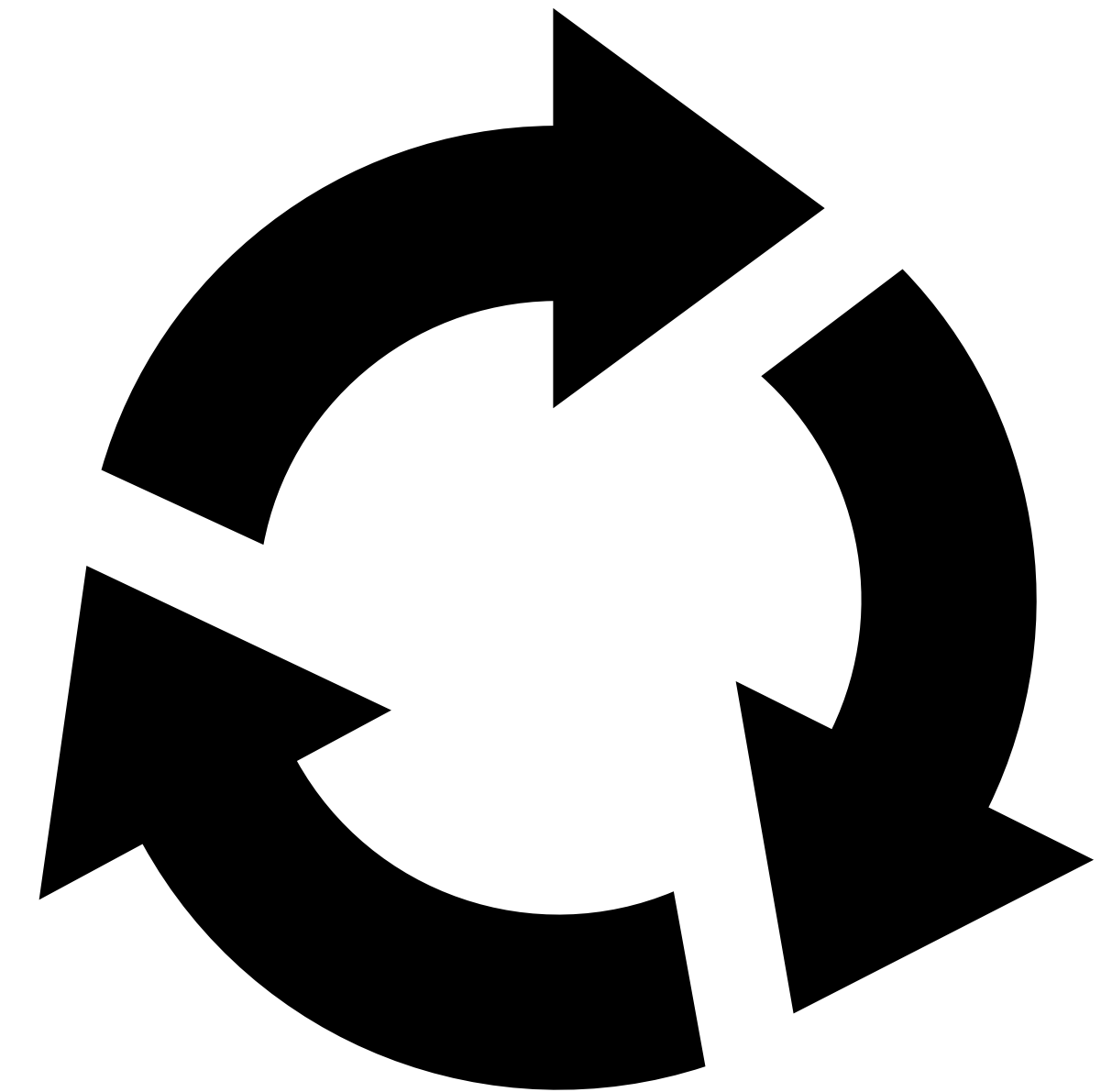
WHAT IS PERMACULTURE?

a whole-system approach to design that creates and maintains a sustainable environment by mimicking how healthy ecosystems naturally thrive in wholeness

SUSTAINABILITY RULE OF THUMB

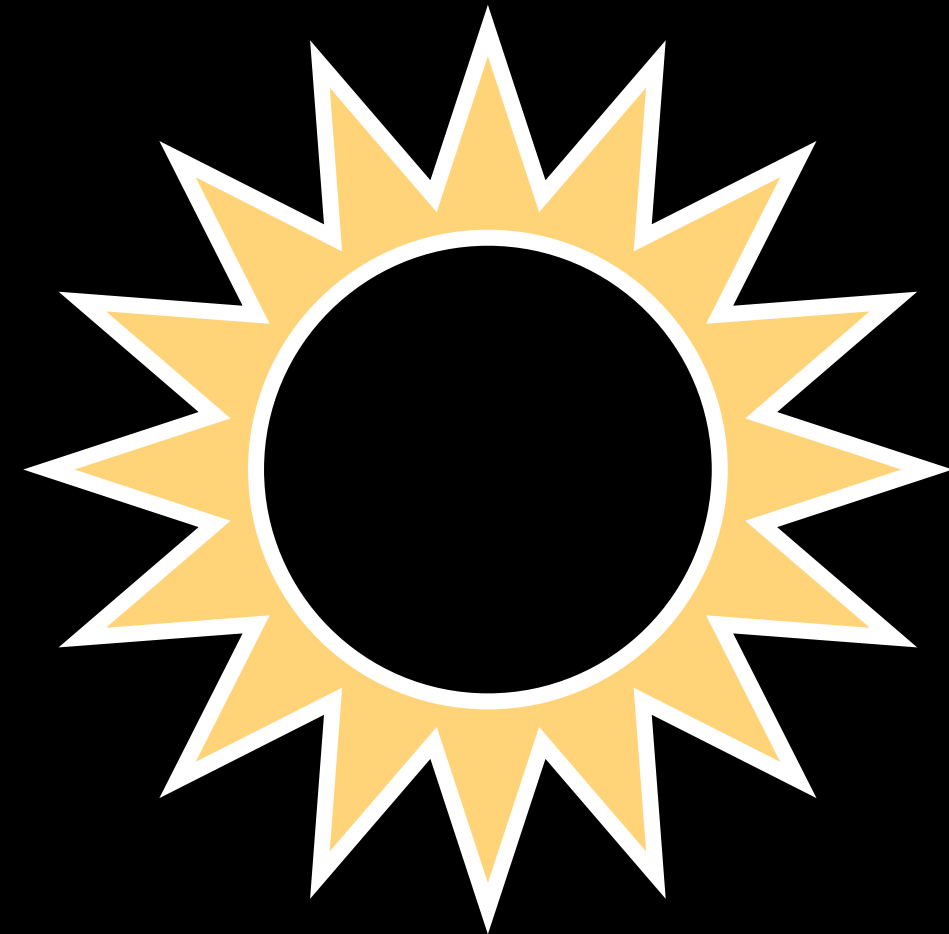
When you need something for your garden,
look to the garden to find it first.

Permaculture planning uses a long-term vision to create the ability to cultivate everything that's needed within your home ecosystem



RELEVANT PRINCIPAL 1: **OBSERVE AND INTERACT**

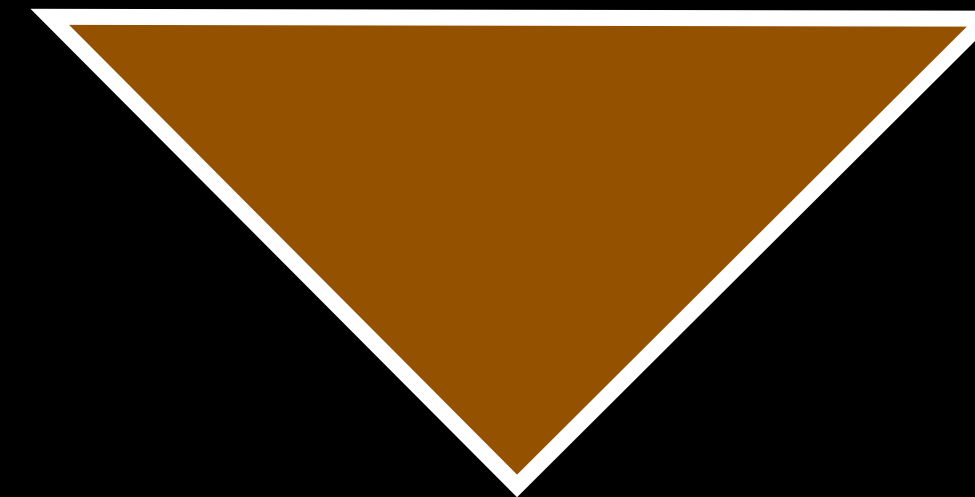
Know your land and work with what you have



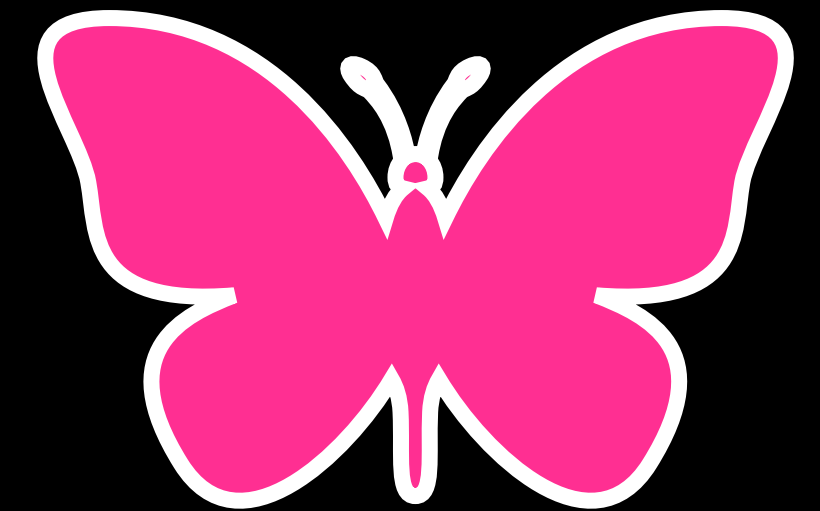
Sun/Shade



Water/Rain/Run-off/Pools



Soil



Insects and animals

RELEVANT PRINCIPAL 2: **AMPLIFY INTERDEPENDENCE**

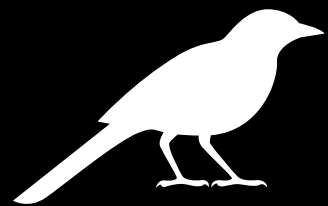


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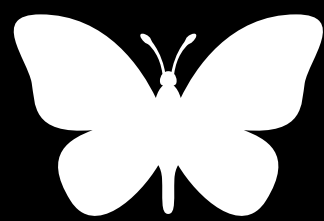
KNOW YOUR PLANTS: Environmental Services

*How do the different elements of the environment **support** each other?*

**Animal
food or habitat**



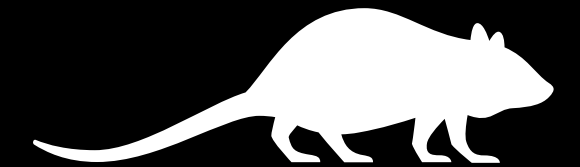
**Insect
food or habitat**



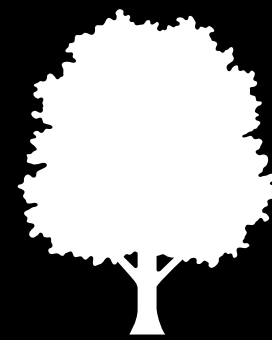
**Mulch-
Making**



**Pest-
Repellant**



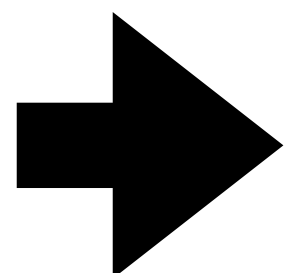
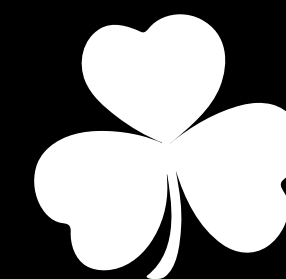
**Shade-
Giving**



**Natural
Fertilizer**

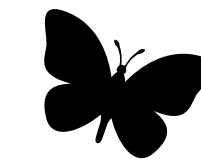
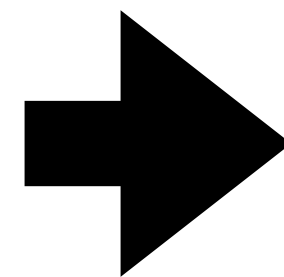


**Weed-
Suppressor**



RESOURCE: Calscape Native Plant Directory: <https://calscape.org/>

RELEVANT PRINCIPAL 2: **AMPLIFY INTERDEPENDENCE**



TREE GUILDS

Tree guilds pair trees with plants that cover all the environmental services necessary for a thriving plant community

RESOURCE: <https://www.theresiliencyinstitute.net/grow/plant-fruit-tree-guild/>

RELEVANT PRINCIPAL 2: **AMPLIFY INTERDEPENDENCE**

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Companion planting helps to know veggies and fruits do well together, and which should be separated. These lists consider:

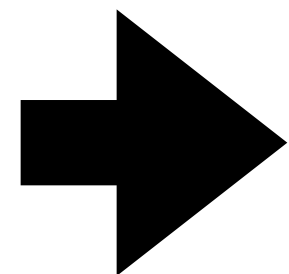
Root Depth and Nutrient Needs (place hungry plants next to less hungry plants)

Sun/Shade Needs (be aware that tall plants can be a benefit or hinderance depending on neighboring plant's sun needs)

Similar Pests (it's best to place plants who have the same pests far from each other to avoid infestation)

Beneficial Insect Attraction (pollinators or insects who eat pests)

Pest Repellant (many herbs and flowers have properties that keep pests away)



RESOURCE: <https://www.almanac.com/companion-planting-guide-vegetables>

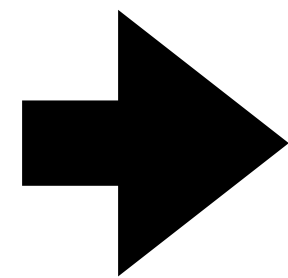
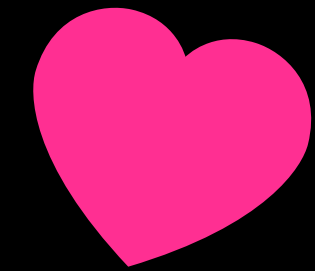
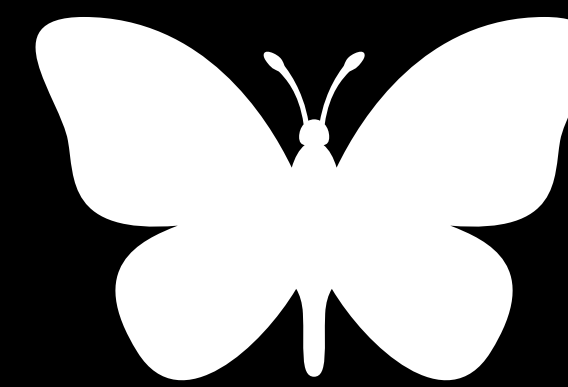
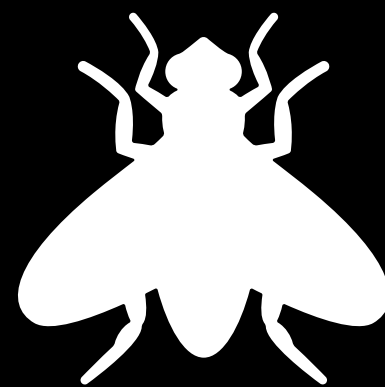
SUPPORTING POLLINATORS



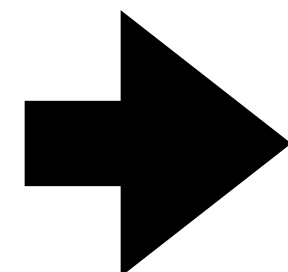
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Beyond planting flowers, you can help pollinators with:

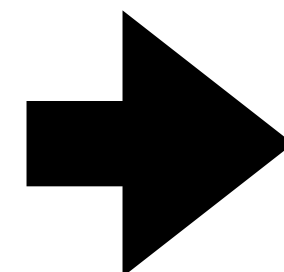
- Supporting specializations: specific plants and animals who depend on each other for survival
(like the monarch butterfly and the milkweed; the elderberry beetle and the elderberry)
- Creating pollinator nesting sites and habitat with bare ground and bee houses



RESOURCE: <https://www.xerces.org/>



RESOURCE: <https://arboretum.ucdavis.edu/pollinator-gardening>



RESOURCE: <https://beegarden.ucdavis.edu/>

RELEVANT PRINCIPAL 3: CATCH, STORE & REUSE RESOURCES

- **Rain-Catchment:** use gutters to direct rain into containers or the ground
- **Swales:** use run-off on slopes to catch water in the ground
- **Grey-water reuse:** redirect your laundry water into your yard
- **Compost:** Turn your kitchen scraps and yard waste into fertilizer

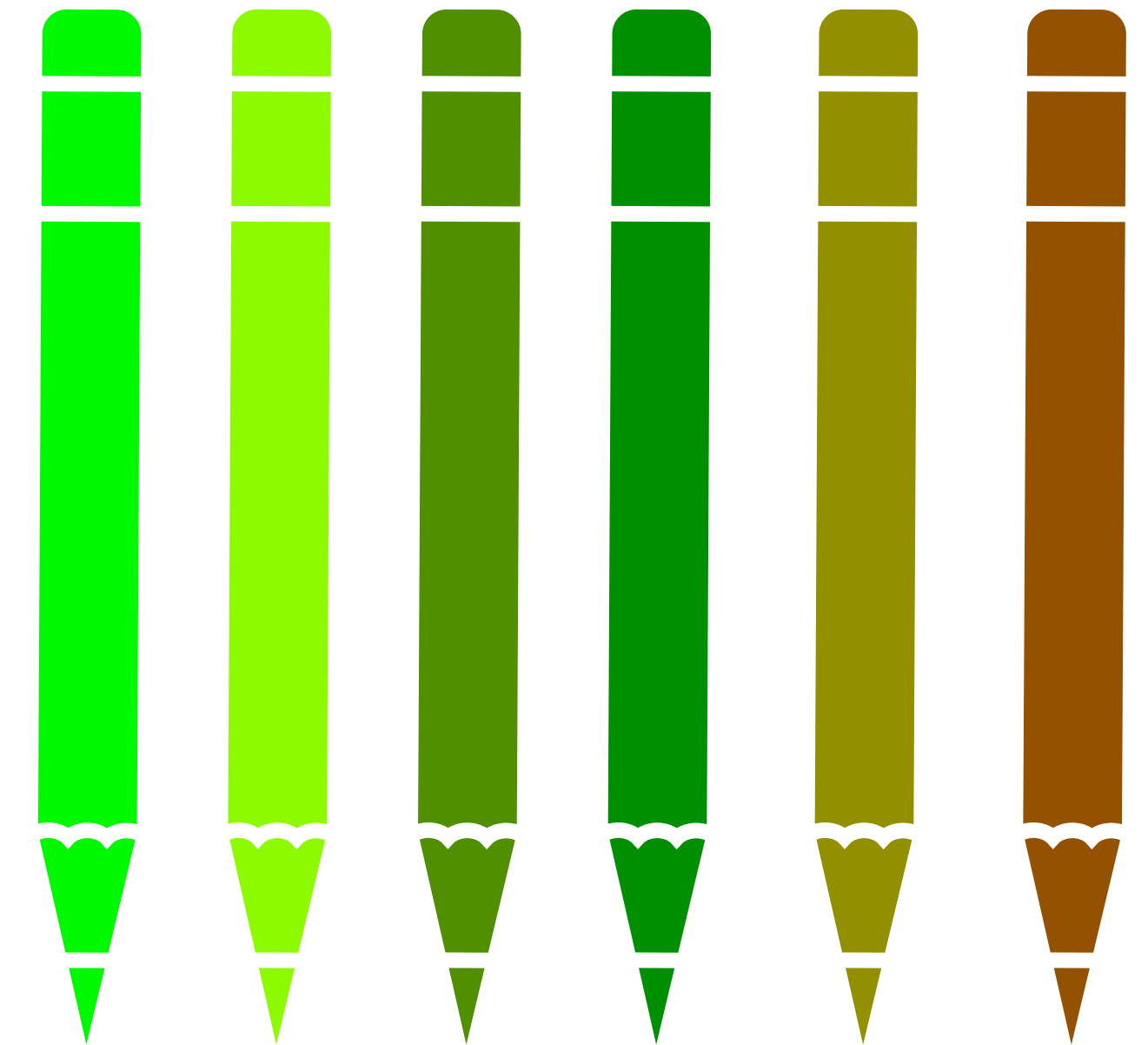
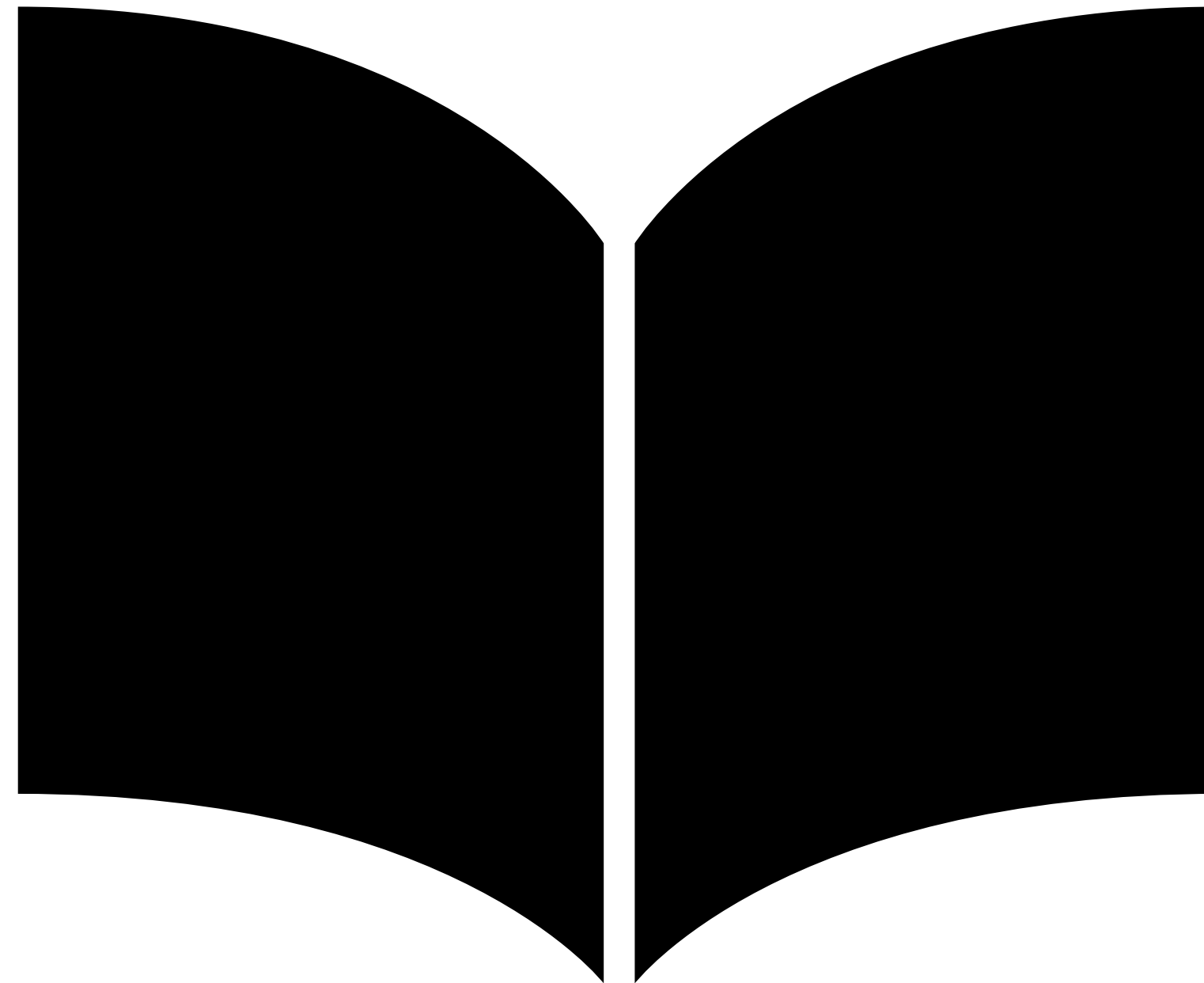
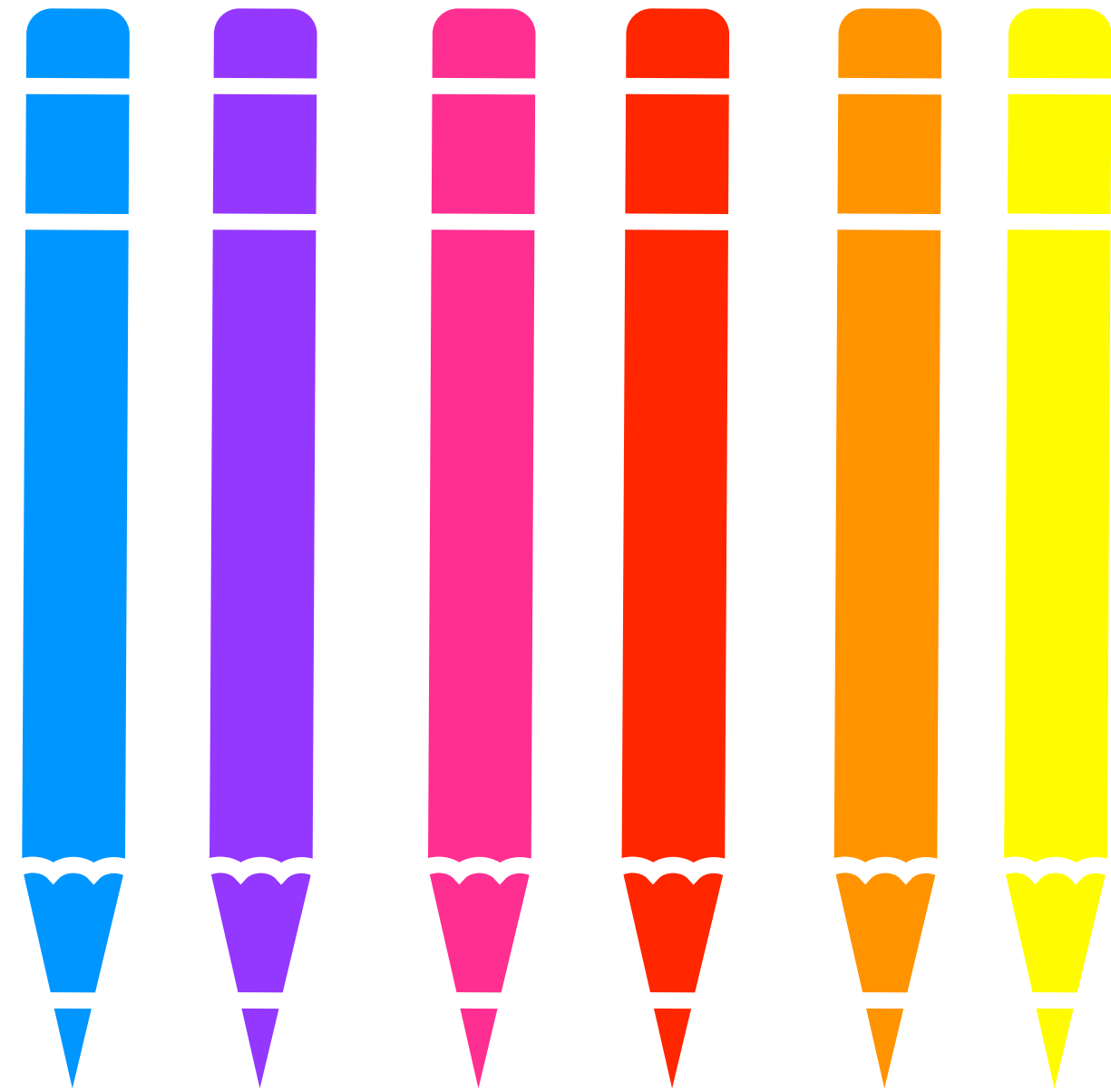
➔ **WATER RESOURCE:** <https://sustainablesolano.org/general-water-resources/>

➔ **COMPOST RESOURCE:** <https://r6tac7.p3cdn1.secureserver.net/wp-content/uploads/2021/10/Starting-a-Backyard-Compost-System.pptx.pdf>

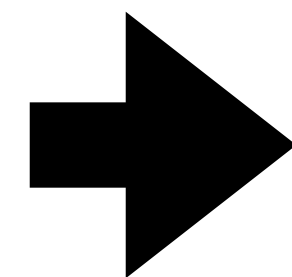
SYNTHESIZE THE FACTORS & DRAW YOUR DESIGN

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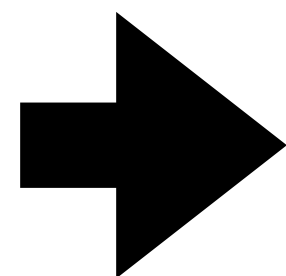
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use simple gridded paper to mark the square feet placement of each plant and use color pencils

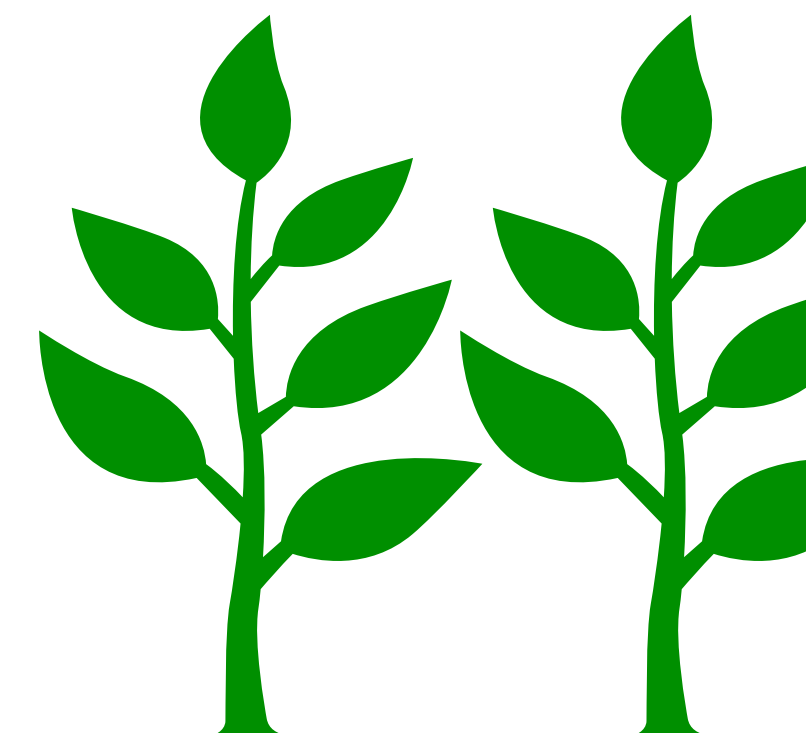
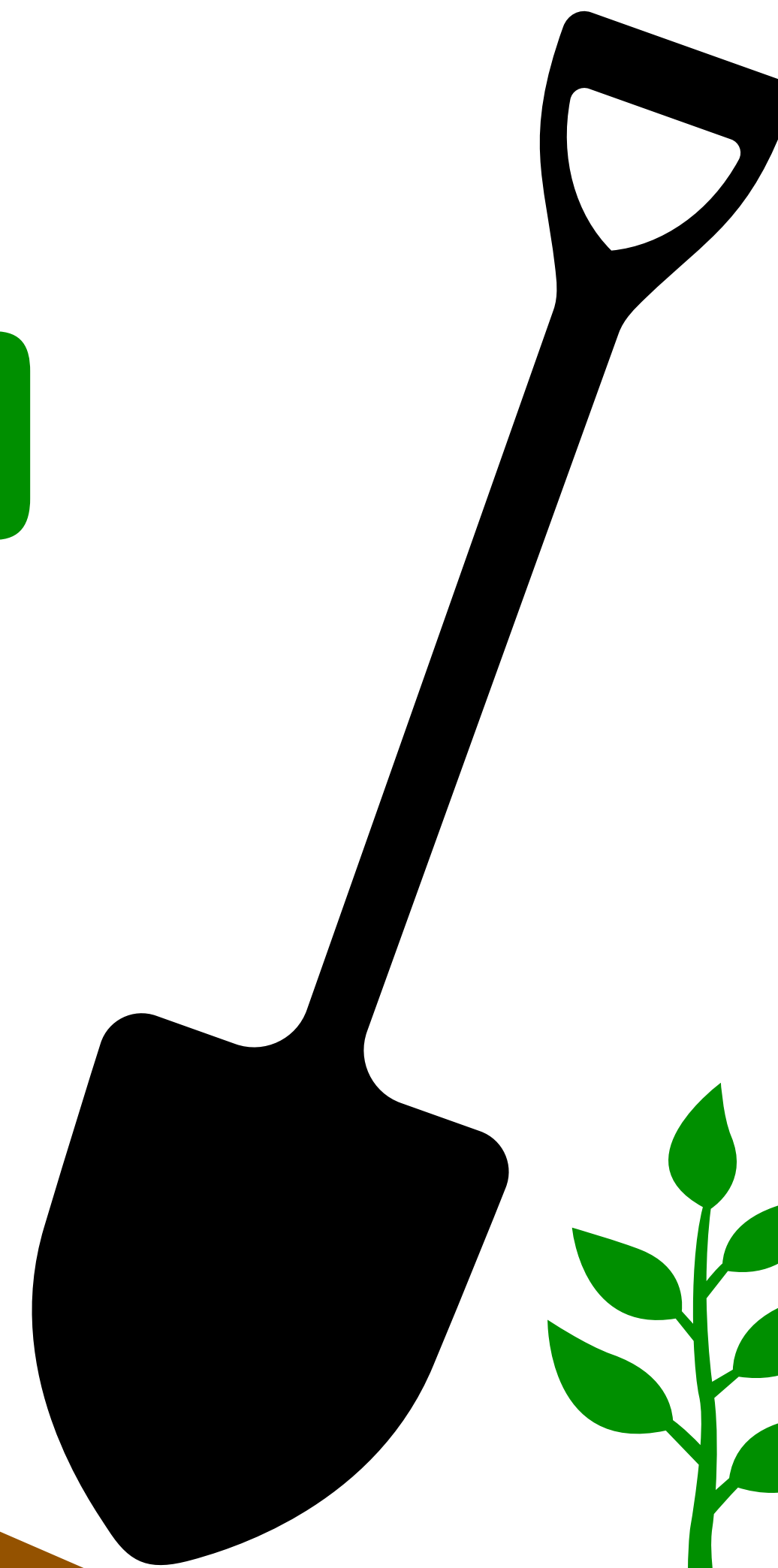


VEGGIE RESOURCE: <https://squarefootgardening.org/>



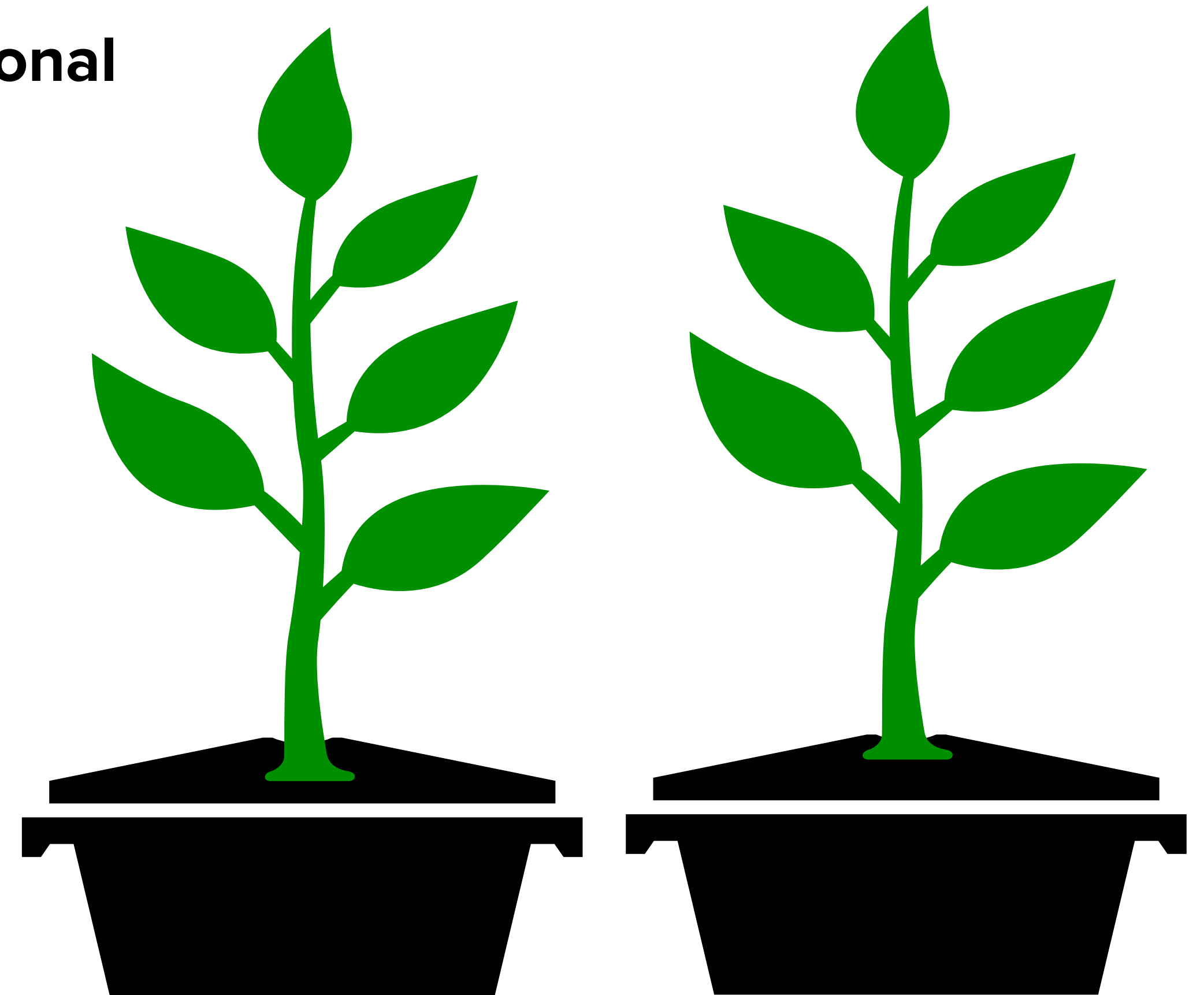
RESOURCE: Calscape Native Plant Directory: <https://calscape.org/>

STEP THREE: INSTALLING THE YARD



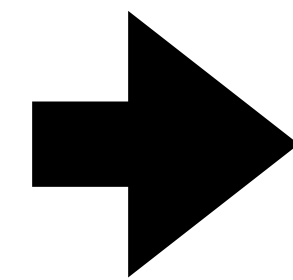
SOURCING PLANTS: NURSERIES & PLANT SALES

- Check out nurseries in you county (and neighboring counties)
- Local universities and non-profits often host seasonal sales
- Check for:
 - Plant substitutes that serve the same environmental and aesthetic functions
 - Seasonal availability
 - Varietal substitutes
 - Special orders



SOURCING PLANTS: **GROW FROM SEED**

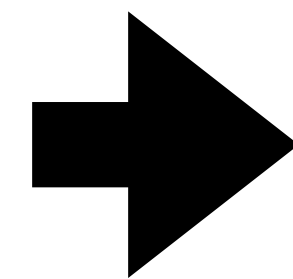
Sourcing Seeds



RESOURCE: <https://sustainablesolano.org/for-public/plant-resources/>

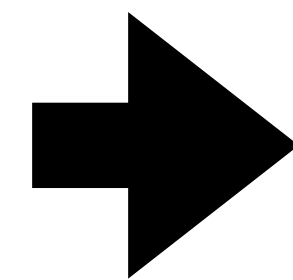
(Look for “Seed/Plant Sources”)

Growing Native Seeds

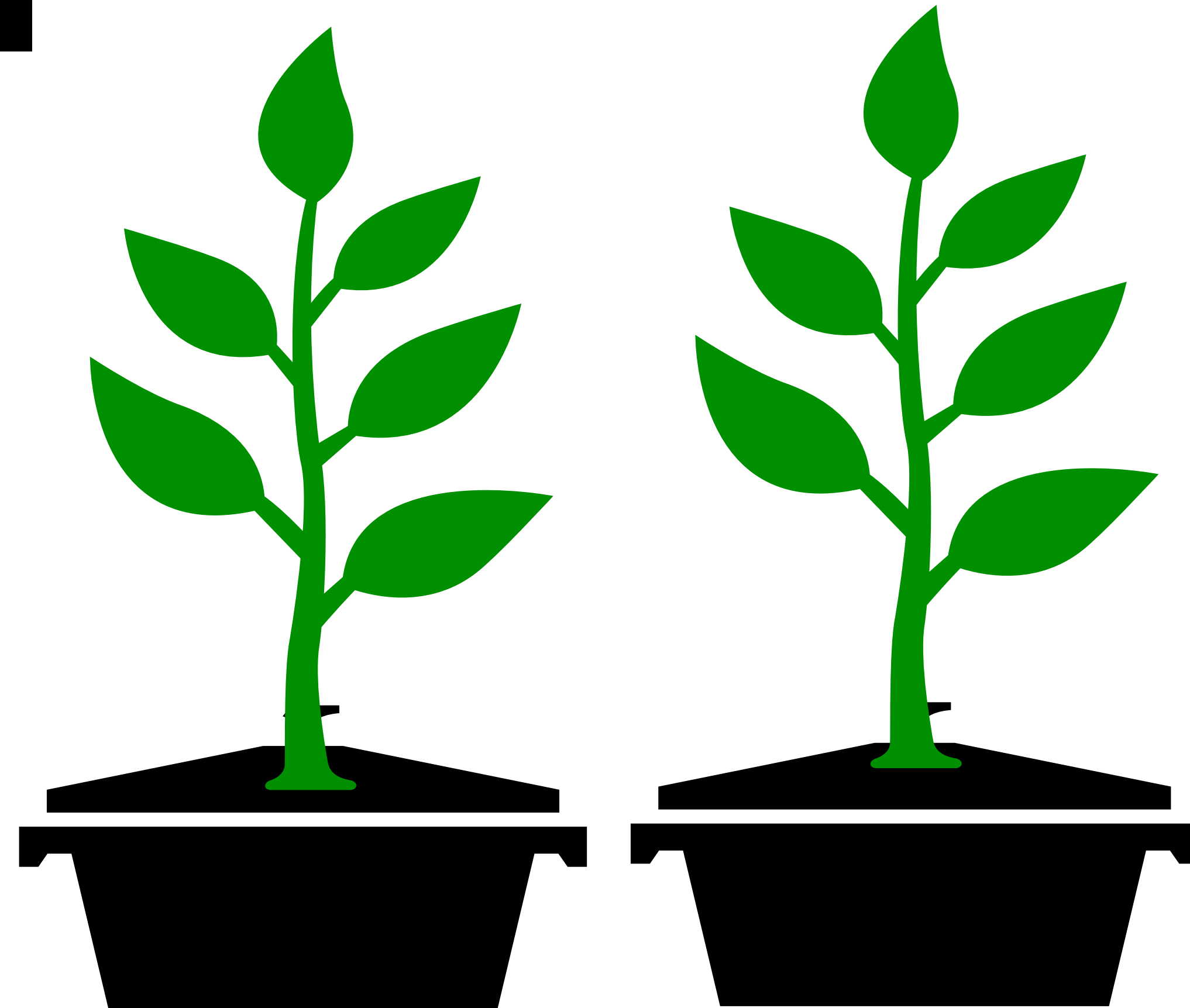


RESOURCE: https://calscape.org/seed_propagation.php

Growing Veggies from Seed

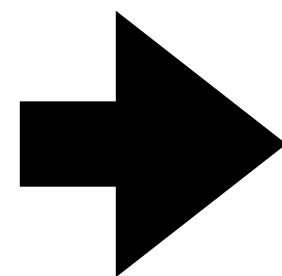


RESOURCE: <https://www.planetnatural.com/vegetable-gardening-guru/seed-starting/>



GROUND WORK: SOIL PREPARATION

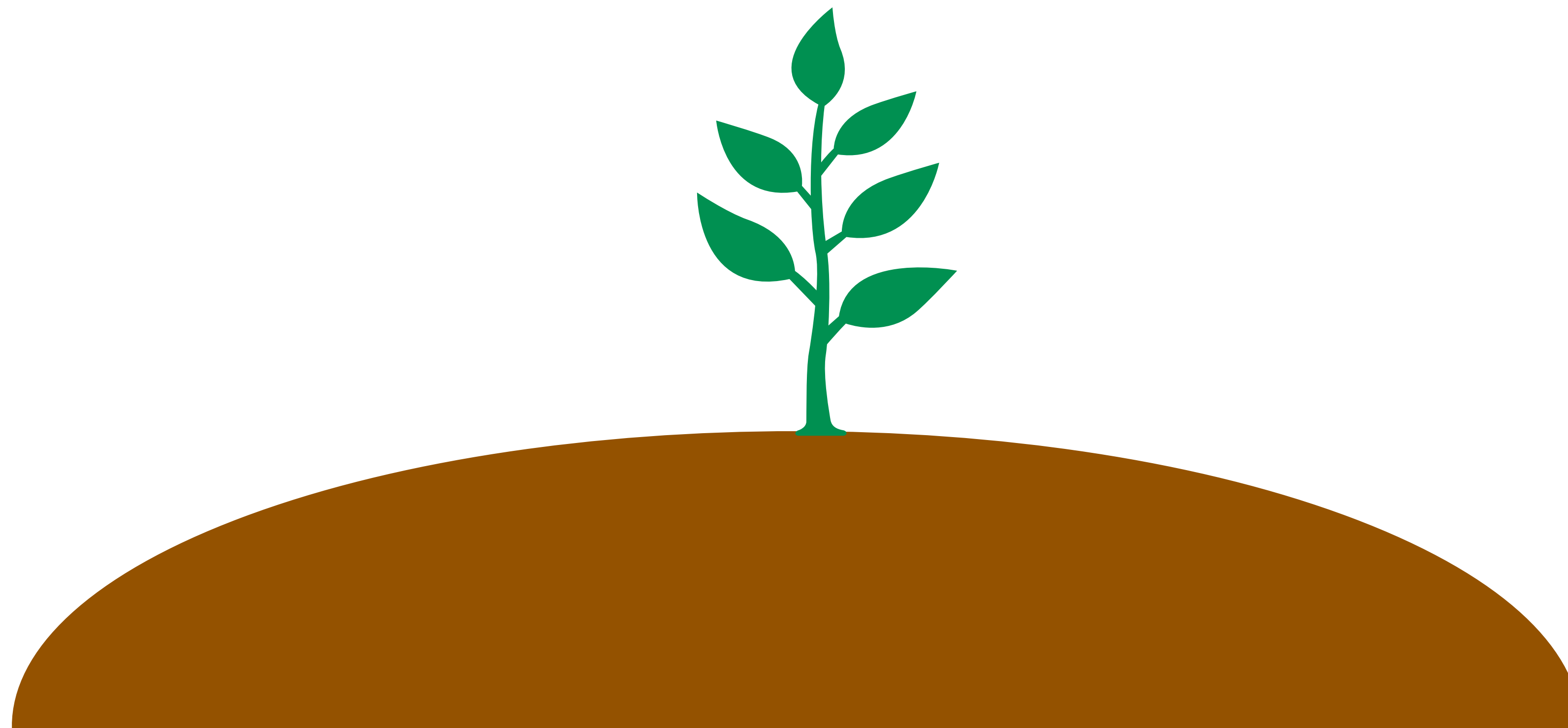
- **Healthy soil is the foundation for healthy plants. While sheet mulching can help to enrich and protect soil, depending on your soil type, you may consider amending it. Different plants have different soil needs. Consider**
 - **Compost (can be homemade)**
 - **Planting Mix**
 - **Topsoil Mix**
 - **Worm Castings (can be homemade with worm-bins)**
 - **Pebbles**



RESOURCE: <https://sustainablesolano.org/for-public/soil-resources-general-public/>

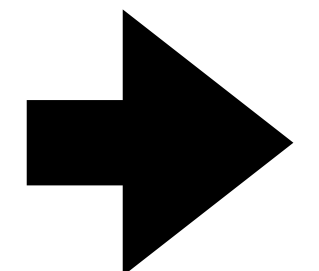
GROUND WORK: MOUNDS

Creating mounds as planting zones can help to amend soil for plants that share the same soil needs. For example, you may have an area where the plants need a lot of water drainage, so you add some pebbles, but only to that area. If you dig swales, you can use the soil from them for your mounds.



PLANTING TIPS:

- **Make sure you leave enough room for the plant to grow to full size**
- **Use chalk markings for placement**
- **Include native soil in your planting mix for:**
 - **water retention**
 - **microbes**
- **Hole-Size: in general, holes are best twice the diameter of the root ball and no deeper than the root ball is high**
- **Root-bound plants**
 - **Some plants are very sensitive to root disruption**
- **Separating seedlings**
 - **Make sure you've only got one plant from a tray!**

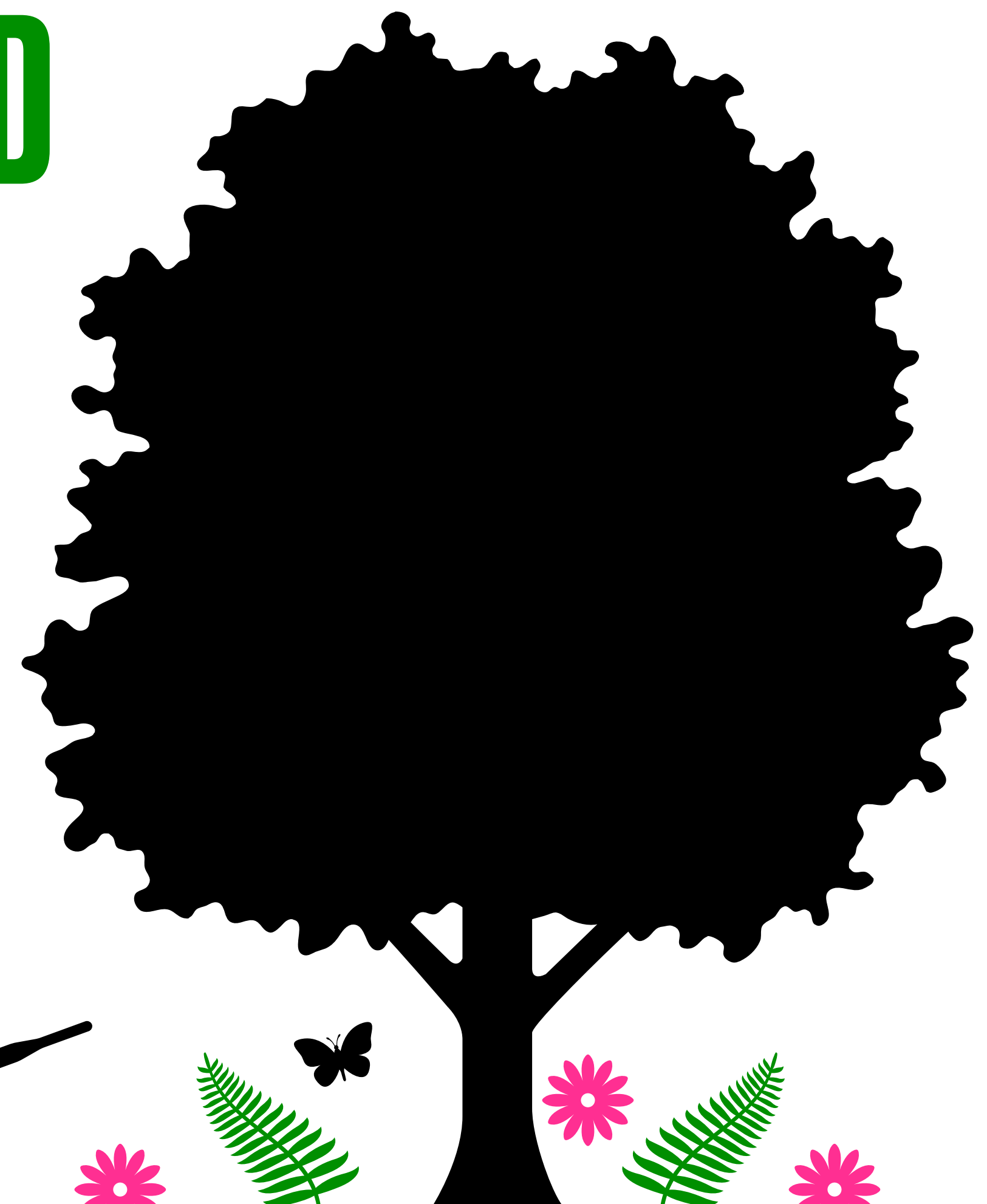
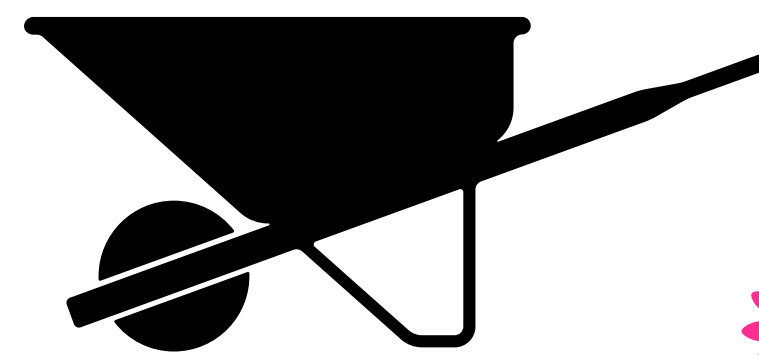
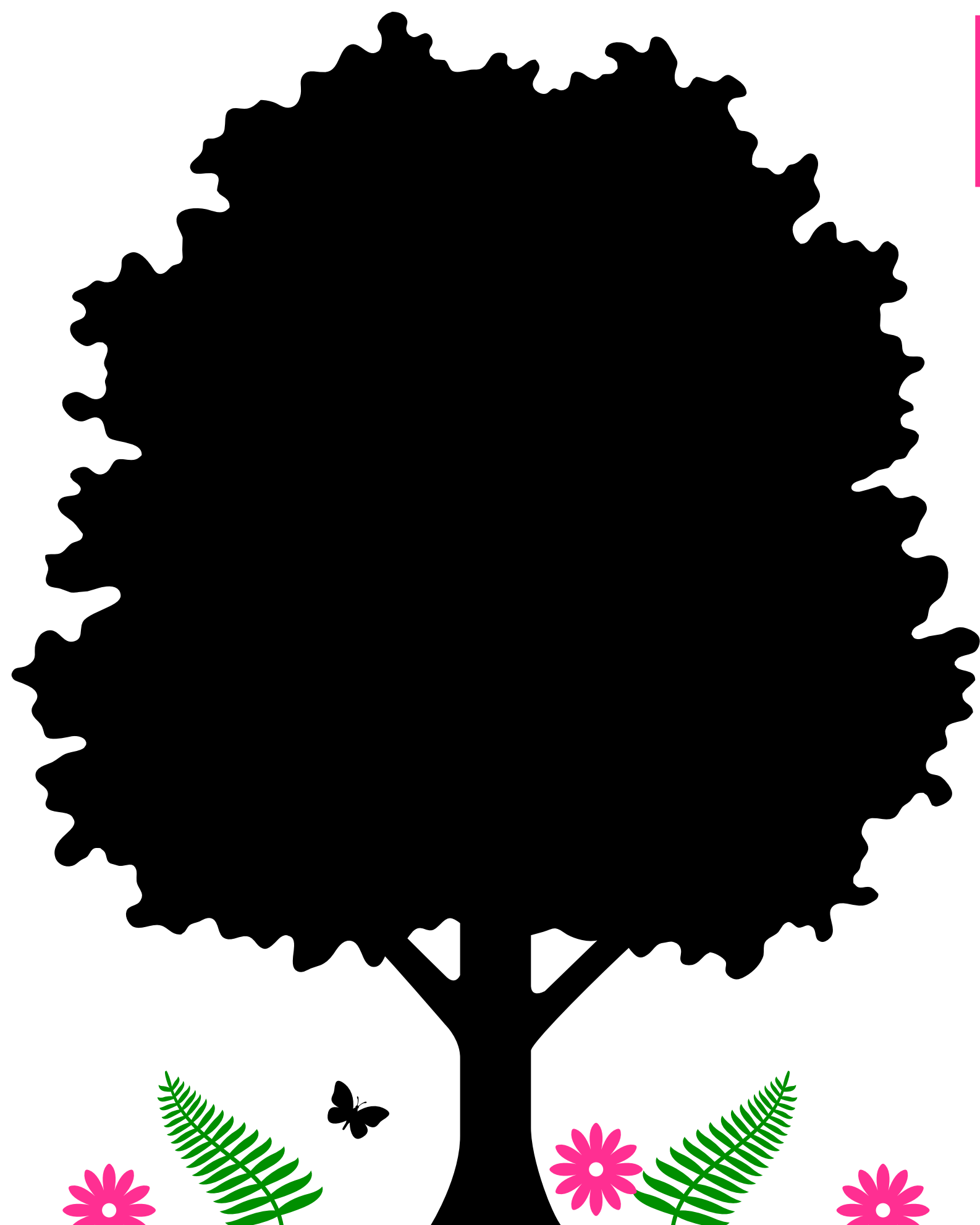


RESOURCE: <https://www.finegardening.com/project-guides/gardening-basics/planting-the-right-way>



STEP 4:

MAINTAINING THE YARD

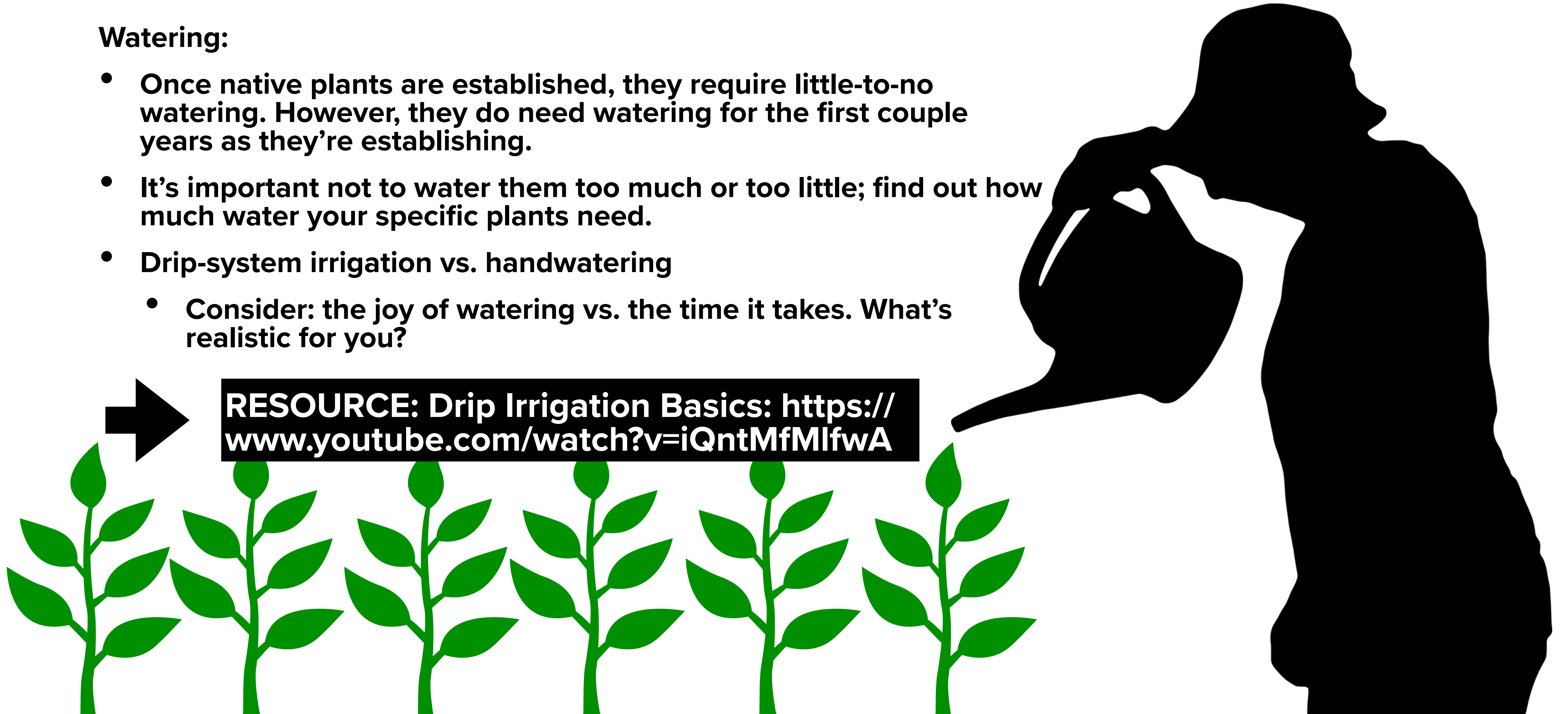


THE NUTS AND BOLTS OF MAINTENANCE

Watering:

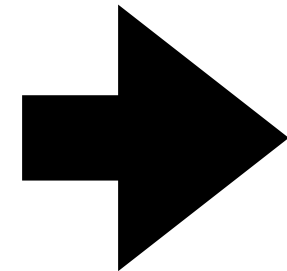
- Once native plants are established, they require little-to-no watering. However, they do need watering for the first couple years as they're establishing.
- It's important not to water them too much or too little; find out how much water your specific plants need.
- Drip-system irrigation vs. handwatering
 - Consider: the joy of watering vs. the time it takes. What's realistic for you?

RESOURCE: Drip Irrigation Basics: <https://www.youtube.com/watch?v=iQntMfMlfwA>



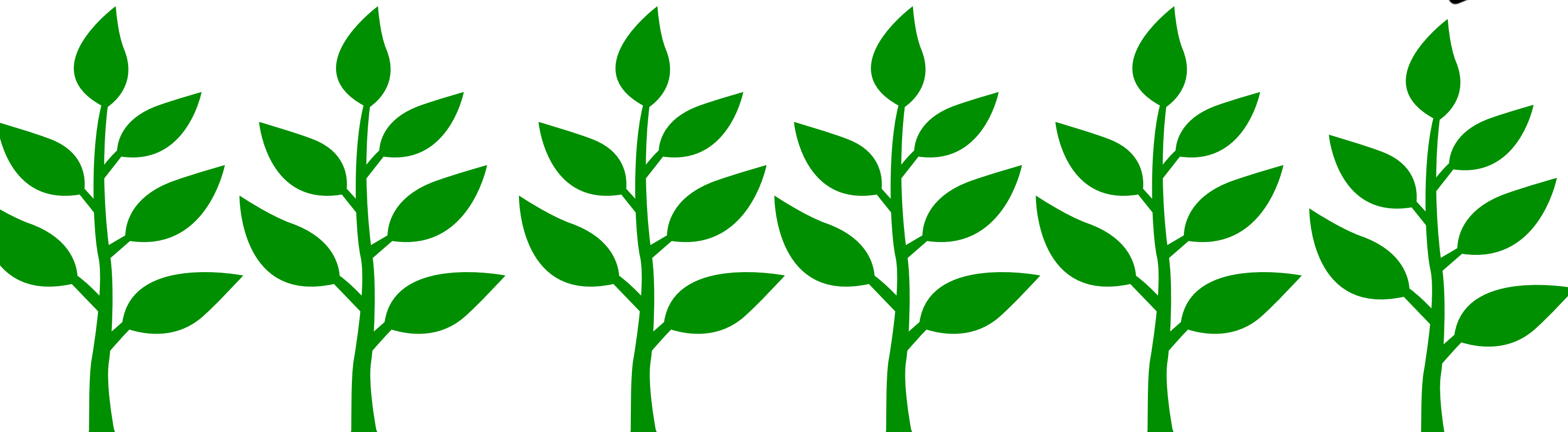
THE NUTS AND BOLTS OF MAINTENANCE

- Pruning, Weeding, Pest-Control: each plant has its own needs.
Get to know your plants



RESOURCE: <https://sustainablesolano.org/for-public/plant-resources/>

(Look for the sections on Pest Control, Gardening 101, and Fruit Tree Planting and Pruning Resources)



FINAL STEP: COMMUNITY

JOIN THE ONLINE SUPPORT GROUP

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- Private online platform hosted by yours truly
- Locally-based groups
- Sharing questions, tips and resources with each other
- Helping each other with labor and sourcing
- Sharing abundance
- Making friends
- Having fun!



SIGN UP TO THE NEWSLETTER AT
WWW.THELIVINGMIRRORPROJECT.ORG
FOR MORE INFO

Take it to the NEXT LEVEL with:



the
Living
mirror
project

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The Living Mirror Project is an arts organization that cultivates Peace by asking the question: **"What if everything is a mirror?"** and **"How can we love it, together?"**

Through workshops and community performances, The Living Mirror Project offers opportunities for diverse groups of people to grow peace within and without.

With songs, stories, poems and pictures, each is empowered to add their own piece of peace to the puzzle of our unity.

Learn more and subscribe to the newsletter:

www.thelivingmirrorproject.org

MUSICAL BLOG: SONGS & STORIES 4 PEACE (IN PROGRESS)

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FALL '23 "GRIEF, GRANDMA, GARDENS & GRACE"

HOME YARD INSTALLATION

SPRING '23 URBAN PERMACULTURE

WITH SUSTAINABLE SOLANO

FALL '22 RESTORATION & STEWARDSHIP

WITH PUTAH CREEK COUNCIL & PARTNERS

Access past seasons and subscribe to upcoming seasons:

<http://www.thelivingmirrorproject.org/blog.html>

HEART OF THE GARDEN

Online Group
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Cultivating Confidence, Compassion and Connection through Nature's Wisdom



- creative reflection prompts for harnessing your inner-wisdom with the natural world
- a private online community
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- a monthly Zoom to share your creative reflections and build connections

Sign up for a FREE 2-hour Online Intro at:

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BIG THANKS TO:



thelivingmirrorproject.org

- Community Organizing and Education: **Sustainable Solano** <https://sustainablesolano.org/>
- Funding: **Solano County Water Agency** <https://www.scwa2.com/>
- Sustainable Landscape Design: **Native Sun Gardens by Joshua Burman Thayer** <https://www.nativesungardens.com/about>
- Nurseries:
 - **El Rancho Nursery** (Vacaville) <https://www.elrancho-nursery.com/>
 - **East Bay Wilds** (Oakland) <https://www.eastbaywilds.com/>
 - **The Watershed Nursery** (Richmond) <https://www.watershednursery.com/>