

LCDS Green Committee #1 - warfelg
Lancaster Country Day School
Project Green Challenge
Greenest Challenge Day 11

I created a community garden by our school where I grow vegetables for people facing food insecurity. This year I was able to grow around 300 pounds of produce, all of which I donated to a local food bank. This document will summarize the planting that I will do for next year. On Saturday, I planted mixed lettuce varieties after tearing out my bean beds. These greens will be donated to the Lancaster Food Hub and will help people with food security, so they will definitely have a positive impact on the planet.

Plant varieties:

- Golden nugget tomatoes
- Beefsteak tomatoes
- Plum/sandwich tomatoes
- Red bell peppers
- Lettuce
- Swiss chard
- Spinach
- Zucchini
- Cucumbers
- Green beans
- Beets
- Eggplants

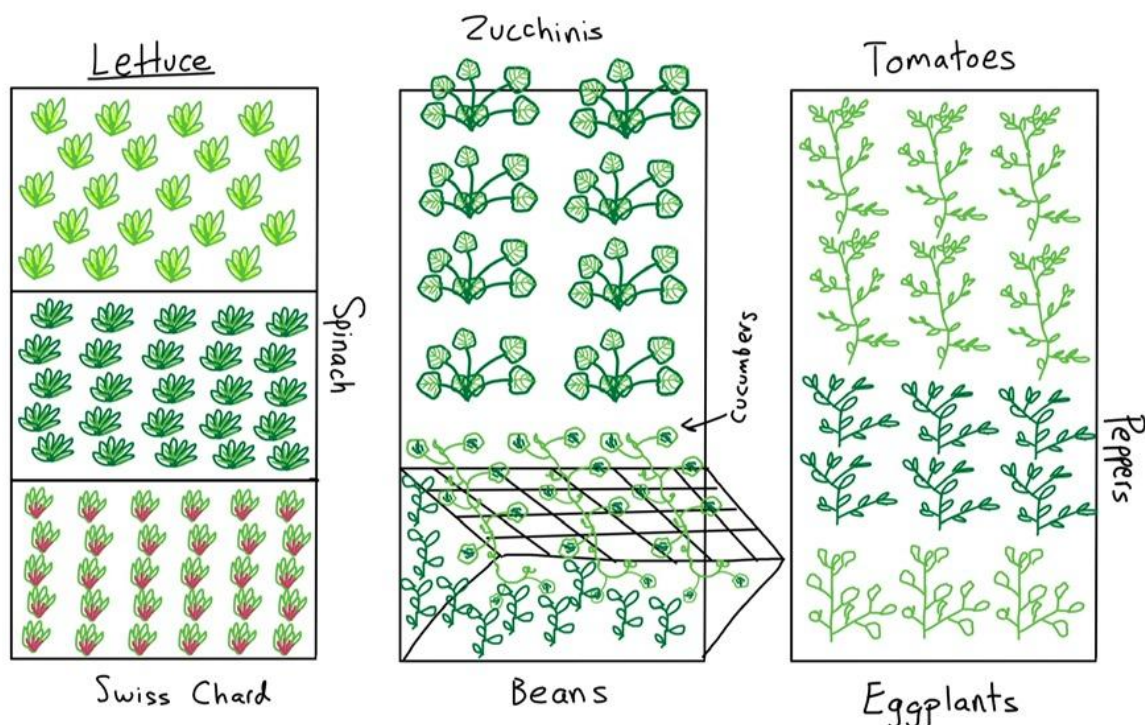
I will start the eggplants, tomatoes, peppers, cucumbers, and zucchinis inside during early spring/late winter. This will give them time to grow healthily and create a strong starting root stock that will grow as the season progresses. These plants will be transplanted into the garden in mid to late May. The beans, lettuce, Swiss chard, beets, and spinach will all be planted directly into the garden beds as these either germinate quickly or do not do well with transplanting. The spinach will be planted in late March, and the lettuce, Swiss chard, and beets will be planted in April. The beans will be sowed into the beds during May when the rest of the vegetables will be transplanted into the gardens.

Because I am donating these vegetables to the Lancaster Food Hub, I need to choose my crops wisely. Spinach is great because it is a beginning of the season crop that is both very productive and full of healthy vitamins and minerals. These spinach plants are also very hardy and can tolerate frost pretty well. I chose lettuce because these plants are extremely productive for me, and they grow back swiftly when I use the cut-and-come-again method. I chose Swiss

chard because of both its high vitamin and mineral content, but also because these plants produce beautiful leaves that grow and regenerate quickly. This crop is also a full season crop unlike Lettuce, which tends to hate the Pennsylvania summer heat. Beets are a great crop because they produce both tubers and beet greens, both of which are edible and extremely healthy. I can also get two harvests out of these if I plan out my planting dates carefully. Beans were chosen because they are extremely productive under the right conditions, very hardy, and they enrich the soil because of their relationship with nitrogen-fixing bacteria. I chose tomatoes, eggplants, and peppers because of how productive they are and how fast they grow. I have to be careful however, because nightshade family pests can easily decimate these crops if they are planted in the same place each year. Zucchini and cucumbers have also worked extremely well in this garden, and the full sun that the location offers allows zucchini plants to truly spread out and produce amazing fruits. However, I have to be very proactive in trimming leaves that have powdery mildew so as to not let it spread to the rest of the plant.

To make this garden environmentally friendly, I have done and will always do three things. Firstly, our school composts all of its vegetable scraps, allowing me to have rich organic fertilizer which I can use on the beds. Secondly, I use only organic fertilizer (other than compost) when I enrich beds so that I don't contribute to the contamination of runoff as much. Thirdly, this year, my goal is to install a rain barrel so that I don't use as much running water when watering the garden.

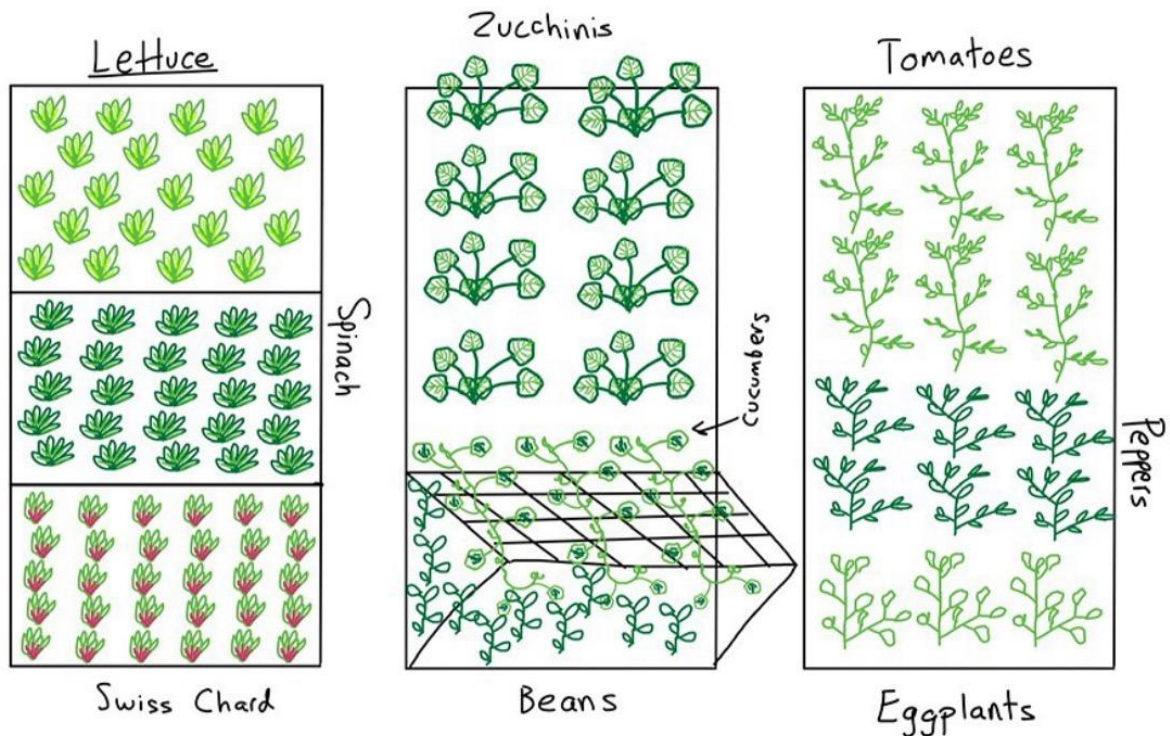
Garden Plan for the existing three beds (fourth one to be built this year as well):





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Icdsgreen Here is the current 2022 planting plan for the community gardens at LCDS (George Warfel's Eagle Scout Project). We also plan to add a new bed this year! All of the produce in this garden will be donated to [@lancasterfoodhub](#) ! We encourage everyone in Lancaster to plant either a personal or community garden this coming spring. [#pgc2021](#) [@turninggreenorg](#)

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Greener Challenge Day 8

How I can improve biodiversity in my area:

One thing that can be done to improve biodiversity in my local area is to plant native plants that flower and fruit. Flowers can help sustain pollinator populations and fruiting plants can feed other native wildlife like birds. In my yard, we have already planted a bunch of PA native plants like Arrowwood viburnum, elderberry, and silky dogwood bushes, pawpaw and dwarf oak trees, and milkweed plants. All of these native plants in our yard have attracted many more bird species and pollinators. This year, I saw a zebra swallowtail butterfly (whose host plant is a paw paw tree), which is extremely rare in the neighborhood where I live. Needless to say, planting native plants can boost local biodiversity tremendously.

Sources:

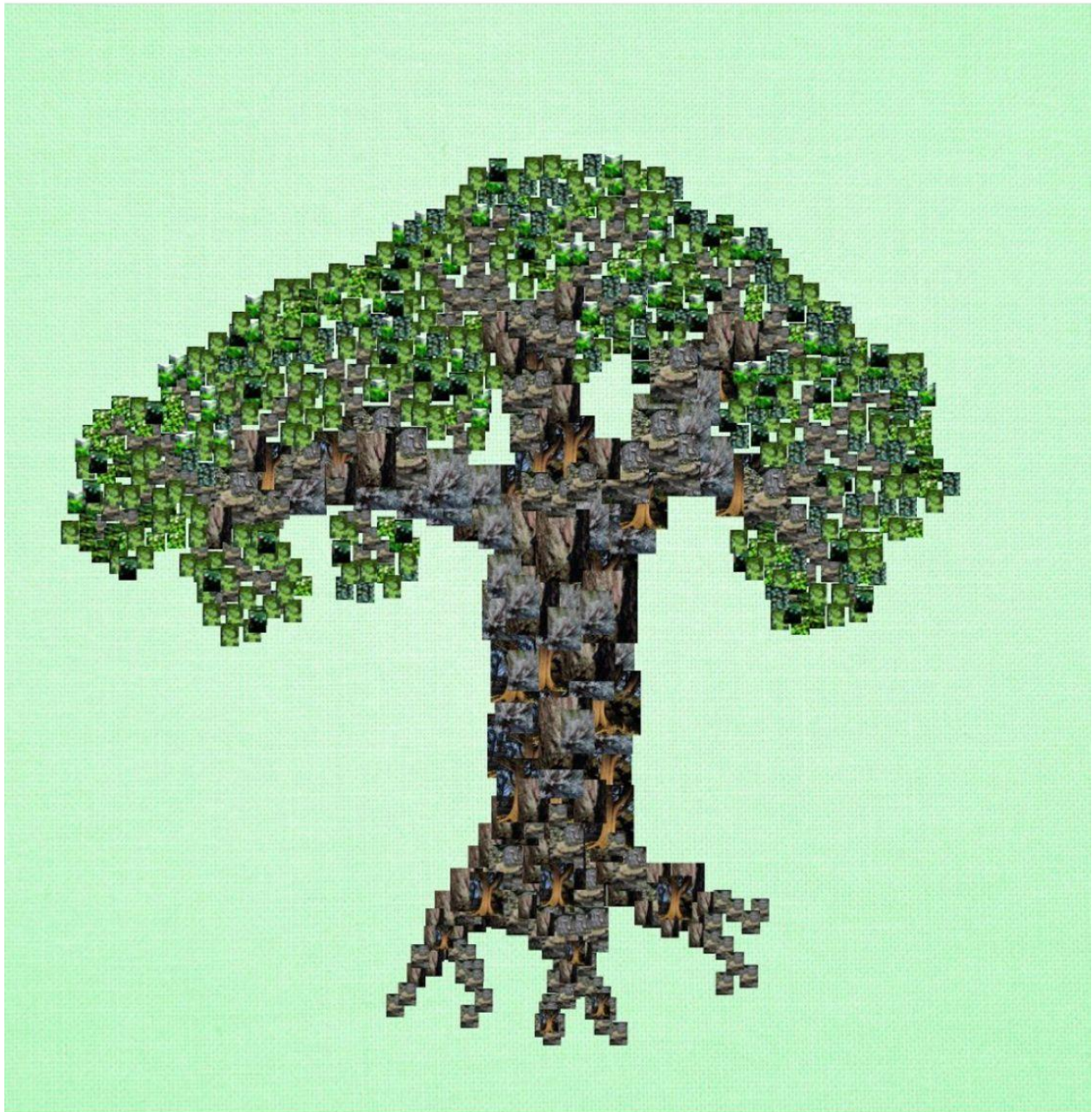
<https://sustainability.yale.edu/blog/6-ways-preserve-biodiversity>



LCDSGREEN Posts



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lcdsgreen Today we took some pictures of local plants and wildlife. We collaged the photos into a tree of life to show how important biodiversity is for our planet. To

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Greenest Challenge Day 21

Define:

I want to make a sailboat sail using a material that mimics the durability and stiffness of a spotted lanternfly wing.

Biologize:

Sails need to be both stiff and very strong in order to stand up to weather conditions and also effectively power a boat.

Discover/Abstract:

When I was observing nature, I found a spotted lanternfly wing on the ground. I picked it up and started examining the structure and properties of it. It was very stiff, and its tensile strength was also very high. When I contorted it in my hands, it reminded me of the material of a sail on a sailboat. It piqued my interest because the wing was so stiff and relatively strong for something so small.

Emulate:

Compared to other insect wings that I have observed in the past, these spotted lanternfly wings seem much more strong. I couldn't find much information on the material that spotted lanternfly wings are made of, but one source said that all insect wings are made of "cuticle."

Evaluate:

If the inner workings of lanternfly wings can be studied, then we can create a synthetic material that mimics this, and perhaps we can make more durable sails in the future. However, there are a lot of problems that could go wrong. If the material in the wings doesn't scale up properly, the sails will be basically useless. Perhaps many wings of different insects can be studied, and the most strong, which may not be that of the lanternfly, will be chosen as a model.

Sources:

Sciencedaily.com
Wikipedia.org
Bucks County Gardens



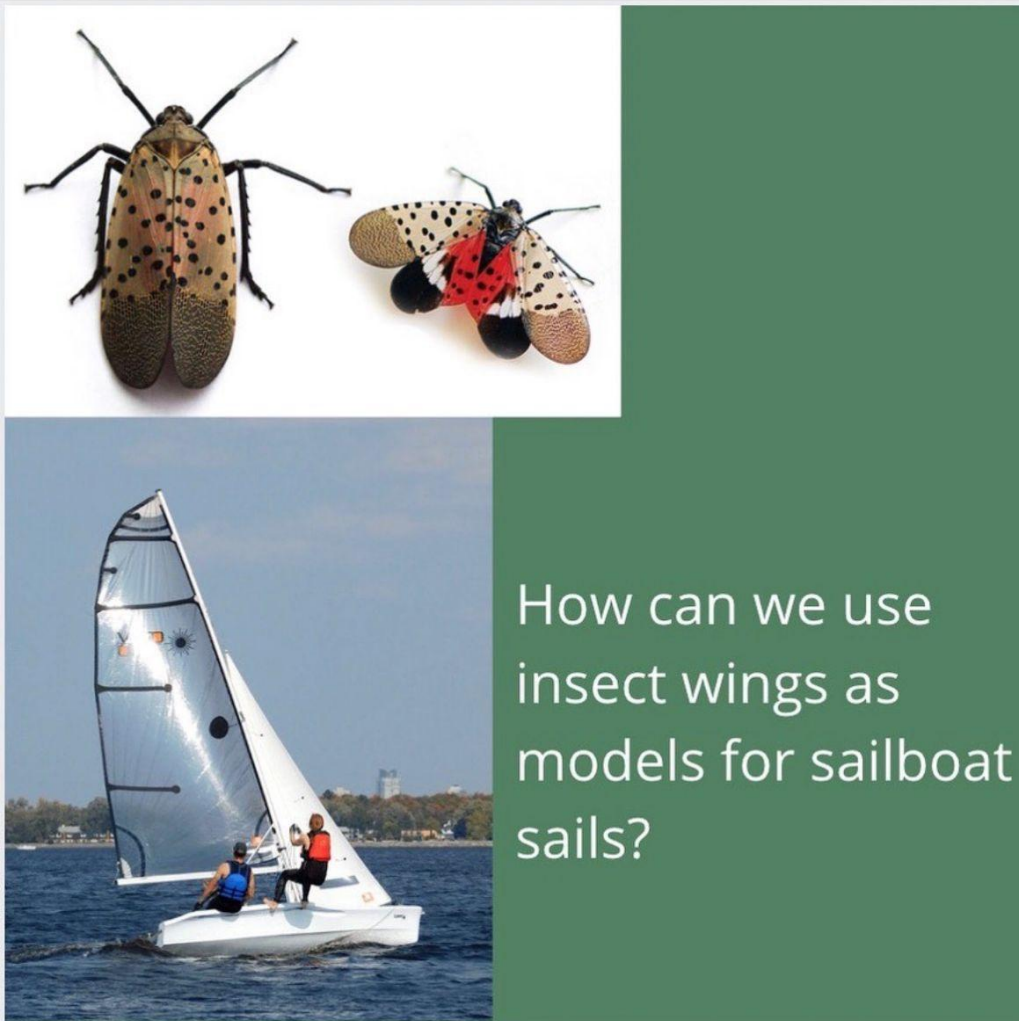
How can we use
insect wings as
models for sailboat
sails?



LCDSGREEN Posts



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How can we use
insect wings as
models for sailboat
sails?



lcdsgreen While out in nature, I found a spotted lanternfly wing, and that got me thinking... Both insect wings and sails have to be stiff and durable in order to provide power. When examining the lanternfly wing, it had all of the properties that a sail had. By investigating the materials used in insect wings, we may be able to make more durable and efficient sails. Bio mimicry is amazing! @turninggreenorg @biomimicryinstitute #pgc2021 #biomimicrychallenge

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Reflection:

I wanted to create a piece of art that conveyed how badly the ocean was suffering while also making use of various materials around me that were destined for waste-processing plants. I ended up deciding on building a miniature coral reef that depicts a coral reef both before and after a bleaching event. I made the corals out of colorful plastic wrappers and paper in the healthy reef, and I made the bleached reef out of plastic grocery bags and newspaper. The rock structure of both reefs was created with reused cardboard in a topographic style that showed the depth and complexity of coral reef rock structure.



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lcdsgreen Here is the difference between a bleached reef and a healthy one—made out of trash. Art by George Warfel #pgc2021 @turninggreenorg

19 seconds ago

















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Photo Collage:



Photo sources for the photo collage:

<https://www.housebeautiful.com/uk/garden/plants/a177/houseplant-mistakes/>

VivaTerra

Walmart.com

Waterfront Botanical Gardens

Britannica

Gardening Know How

Bonsai Outlet

Unsplash

The Press Democrat

Gardener's Path

Treehugger.com

Why I chose the things that I did for the photo collage:

- A photo of indoor/tropical plants because they bring me joy and relaxation all year round, both indoors and outdoors
- A statue of Buddha because it represents meditation and mindfulness. The posture and expression of the statue are also reassuring and calming.
- A fountain because the sound of running water helps me relax. (Falling rain is one of my favorite sounds to fall asleep to)
- A bonsai because a miniature tree allows me to observe the beauty of regular-sized trees, but on a much smaller scale. In addition, tending to them brings me joy and relaxation.
- Orchids are extremely mesmerizing to me, and their flowers are a product of disciplined care, which helps me appreciate my efforts more.
- An amaryllis because their huge flowers brighten up my day and fill me with hope.
- I included a photo of an ocean wave because the sound of crashing waves is another sound that brings me mindfulness. Unfortunately, I live in a landlocked state, so playing the sound artificially might help me.
- Polished stones because I associate them with my late Uncle's beach and his bonsai collection.
- A potted palm tree because it reminds me of the ocean where I feel most at home while hopefully filling me with mindfulness at the same time.
- The leaves of a dawn redwood because it was one of my uncle's favorite bonsai trees.
- A Japanese maple because it was my uncle's favorite tree to make into a bonsai due to its colorful foliage.
- A ginkgo tree because it reminds me of how old the Earth truly is and what my place on it is. These trees always prompt deep thinking from me because of their primordial origins.

The reason I chose bonsai trees and polished stones in general:

- My uncle, a person who I looked up to with the utmost respect, passed away recently. We really bonded over our love of plants and the ocean. He willed me his bonsai collection, and I take care of it along with my dad every day. He had a beach house that was covered in smooth pebbles as well. The sight of most tropical plants, orchids, bonsai trees, and smooth rocks makes me think back to his beach house. That was the place that I am most spiritually grounded, and even though we have sold it, using these materials in my reflection space is the closest that I can get to the real thing.

Reflection after being in the space:

My experience in the space I created was powerful because of all the items that I included inside of it. It really made me think about my larger role in the world. One major takeaway that I had from my meditation was that I need to live life to the fullest each day from now on. I need to separate myself from more shallow things and experience raw nature more often. I want to live life like my uncle, who saw the beauty in everything in life and understood his place in the world. Recently I have been extremely overwhelmed with the college search process, and I think building this space was healing for me. I definitely want to use it very often in the future in order to destress.

THANK YOU Project Green Challenge for creating this challenge because it really has helped me reflect on my life at the present.

Images of my reflection space:

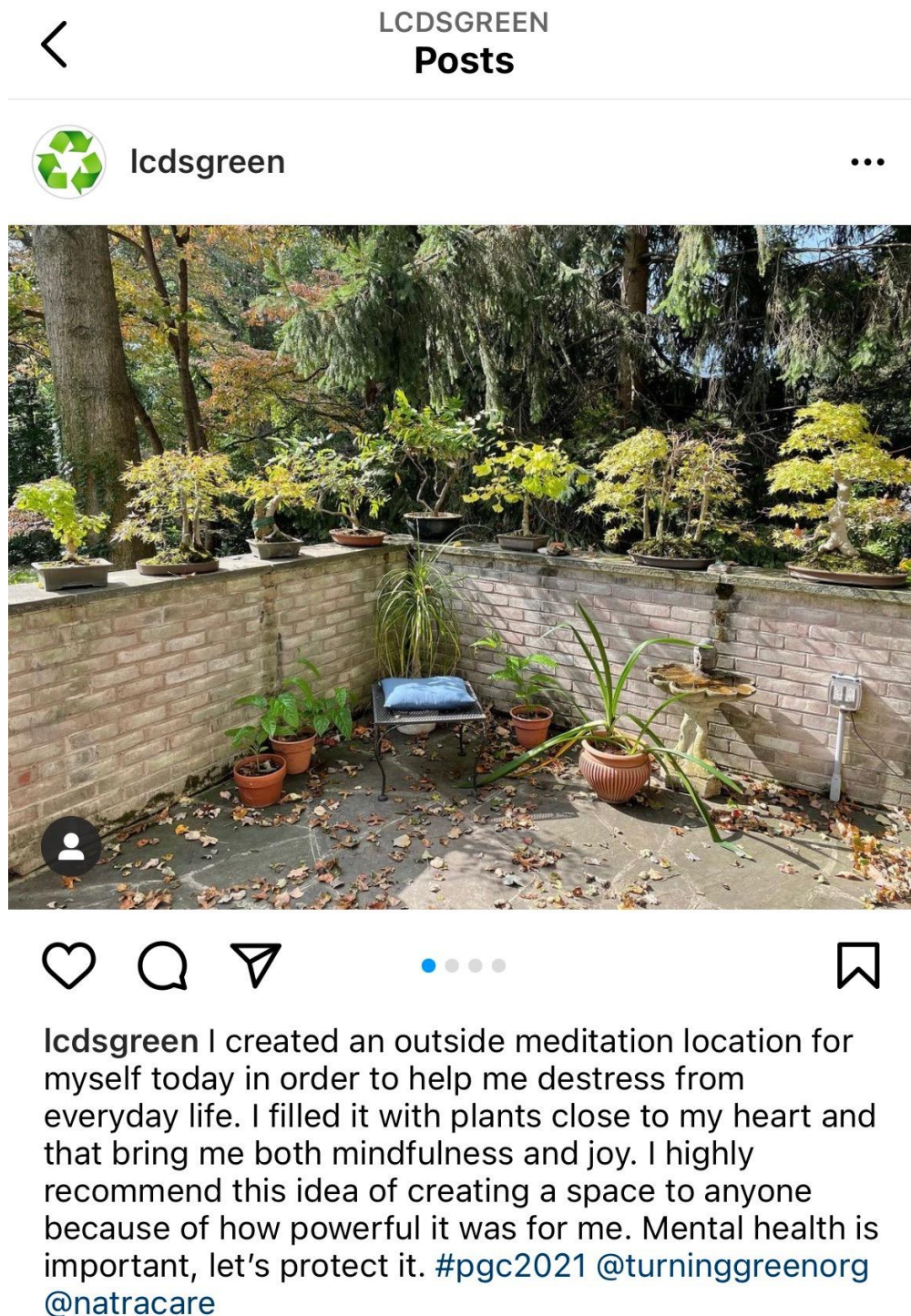








Instagram Post:



Icdsgreen I created an outside meditation location for myself today in order to help me destress from everyday life. I filled it with plants close to my heart and that bring me both mindfulness and joy. I highly recommend this idea of creating a space to anyone because of how powerful it was for me. Mental health is important, let's protect it. #pgc2021 @turninggreenorg @natracare