

# **Empowering Learners Through Applied STEM Learning**

In this blog we explore the relationship between applied STEM and Tools. Change of pace, change of place.

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## **Tour of the Pond at Mezzacello**

A shark cam view of the pond to check for fish health and the status of the pond and water quality. Everything is good to go.

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## **The Garden of Grace and Charity**

We found this sculpture in Virginia. We have been looking for something this charming for years. Now we have her in the garden.

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# **Life Below Water and Fostering Sustainability**

Part of a series of blos detailing my work at Mezzacello to meet UN 17 SDGs. This is life below water and my pond.

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## **Bakki Shower and Biofilter Combo**

A slideshow of the pond systems in the fall of 2022. The Bakki Shower and the Biofilter systems. It's where nature meets tech!

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## **When Water Goes Missing**

Two years ago this was a great mystery. We thought we had a leak in the pond. What I found shocked me. The atmosphere and plants!

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## **Next-Level Algae Collection**

I have been cleaning biofilter sponges of their dried algae by hand. Today I repurposed my chicken feather plucker for algae.

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# **Build Biomass To Make the Soil Black**

When Fall arrives, we turn the beauty of Mezzacello back into Compost using robots, hardwork, and the goodwill of our neighbors.

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# **Label These Bags – The Story Continues**

That one time where I thought I was putting Epsom salt into a pond and I was actually putting aluminum sulfate. Fun times! Label your bags.

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# **Biofilter and Critical Race Theory**

# **The Biofilter and Critical Race Theory**

# Returning to the Farm

I went on vacation last week. It was much needed. As an #UrbanFarmer it is so easy to slip into #workMode 24/7. Sometimes the mind needs time to discover new things. But #realityintrudes. I forgot to clean the biofilter in the pond before I left for a tour of #Monticello and #MountVernon so I could slip back into #CriticalThinking and #Discovery modes. While I enjoyed my visits IMMENSELY, what I came back to was an Urban Farm that was largely unfazed by my absence (Yay! Systems Engineering) But the #BioFilter is a unique #Ecosystem. It REQUIRES human intervention (for now).

I had two big jobs to focus on when I returned from my vacation.

1. Harvesting the dried algae from backup bio-media
2. Cleaning out the biofilter itself

## Reframe the Topic

Both are labor intensive and somewhat regular. I usually do them in a staggered sequence, and I have a robot to do the first. BUT! That robot got broken on accident during my July summer camp. So I had to clean the sponges by hand. As I was grating the sponges across the metal hardware cloth and into the the metal sorting colander I was thinking. I just visited two #Worldclass plantation that used (almost exclusively) slave labor for menial tasks. Here I was bemoaning my broken robot and having to do the work MYSELF! Gasp! This is why Discovery mode is so very important. I saw firsthand what could be accomplished with slave labor. I refactored "slave labor" as automation. But the result is the same. This is when I realized I was really talking about #CriticalRaceTheory.

We spend so much time focusing on the now of that word in opposition to the fact that these events happened, we lose

sight of the REASON that the idea is important to begin with. All great human products require effort. Just reframe the concept of effort as a system and the details become obvious. I know this a #PoliticallyCharged topic, but it really shouldn't be. While I was manually grating algae off those plastic mesh sponges and scraping the wet algae off the interior of that biofilter, I took the time to daydream about Thomas Jefferson or George Washington would have thought about that. Reflect on that and reframe your perspective

