

Aquaponics @ Mid-Pacific

- Science elective course
- Semester long
- Mostly seniors
- "Blended Course"
 - -50% face to face time
 - -50% independent online coursework
- Course Theme: SUSTAINABILITY in HAWAII!

Why Choose Aquaponics?

- Learn through "DOING"
- Takes the "Next Step"
- Multi-disciplinary
- Relevant
- Current events
- "Higher purpose"- solutions to some problems?
- Lifestyle: backyard system
- Selfish purposes!



"Multi-Disciplinary"

- Biology
 - –Systems
 - —Plant biology
 - —Plant nutrition
 - –Nitrogen cycle
- Chemistry
 - Nitrogen cycle
 - –Importance of pH

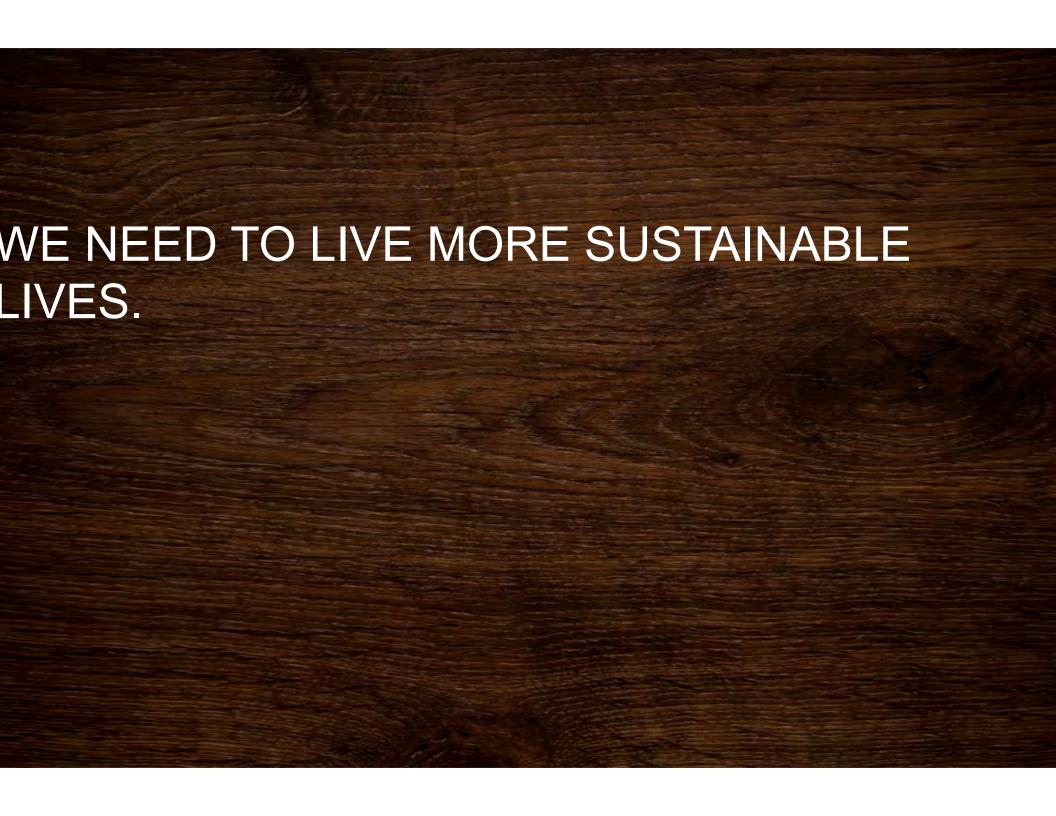
- Economics/Marketing
 - Properly market produce
- Physics
 - -Light
 - –Water flow

Mathematics

We're (Hawaii) pretty screwed...

Are we living ustainable livestyles? What unique issues oes Hawaii face? How can aquaponics e a part of the olution?







In anything, students make good gravel washers







- Students are amazing, they take the class places I never imagined.
- MOTIVATION is so important. If students believe in what they are learning, the will work hard.
- In aquaponics, motivation comes naturally



















What would the collective impact be if every single family home had a small aquaponics system?

- 239,626 homes
- 15 heads of lettuce a month
- = 2,246,493 lbs of lettuce per month

- Fuel saved from local production
- Equivalent to 252,087
 gallons of gas per year



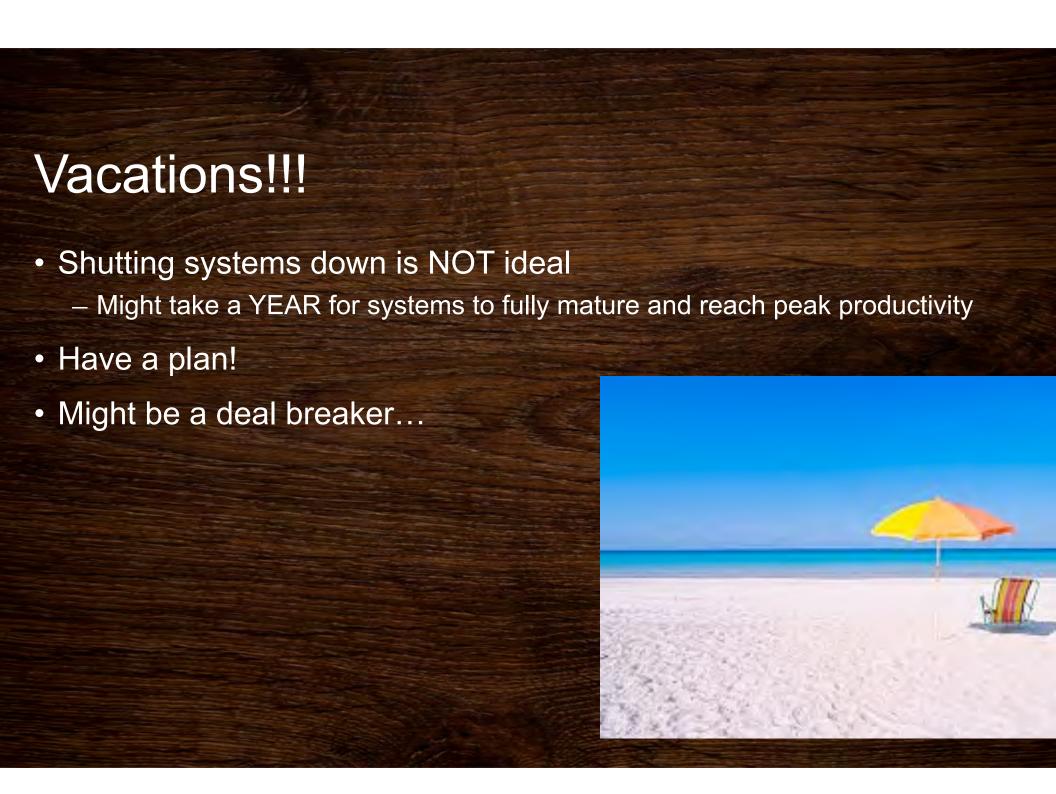
If you aren't in over your head, how do you know how tall you are?"

T.S. Eliot



\$\$\$\$Funding\$\$\$\$

- Aquaponics needs initial capital
- Sometimes harder to find donors as a private school
- I had to beg and plead.
- Note: a lot of people in the aquaponics community have been extremely helpful and generous. I amazed how wonderful people can be.





- Hopefully you won't get any...
- Very difficult to control and we have struggled with it
- Right now tiny slugs have invaded our growbeds



Consistency is KEY

- It is so very important to maintain consistent conditions
 - Maintain pH
 - Supplement iron/potassium/calcium
 - Feed fish as much as possible, try not to let nitrates drop
 - WORMS
- Poor consistency can lead to problems
 - Poor growth
 - -BUGS are opportunistic



- The more filtration the better.
- Allows for high fish densities and heavy feeding.
- Higher concentration of nutrients



- Don't let your personal opinions prevent kids from trying things
- Kids are going to have crazy ideas, let them try
- I promise you, you'll learn something new

