

A dolphin is shown swimming in clear blue water, its head and front flippers visible. The dolphin's mouth is slightly open, and it appears to be looking towards the camera. The water has a textured, wavy surface. Overlaid on the image is the word "Aquaponics" in a large, white, sans-serif font, and below it, the names of the authors in a smaller, white, sans-serif font.

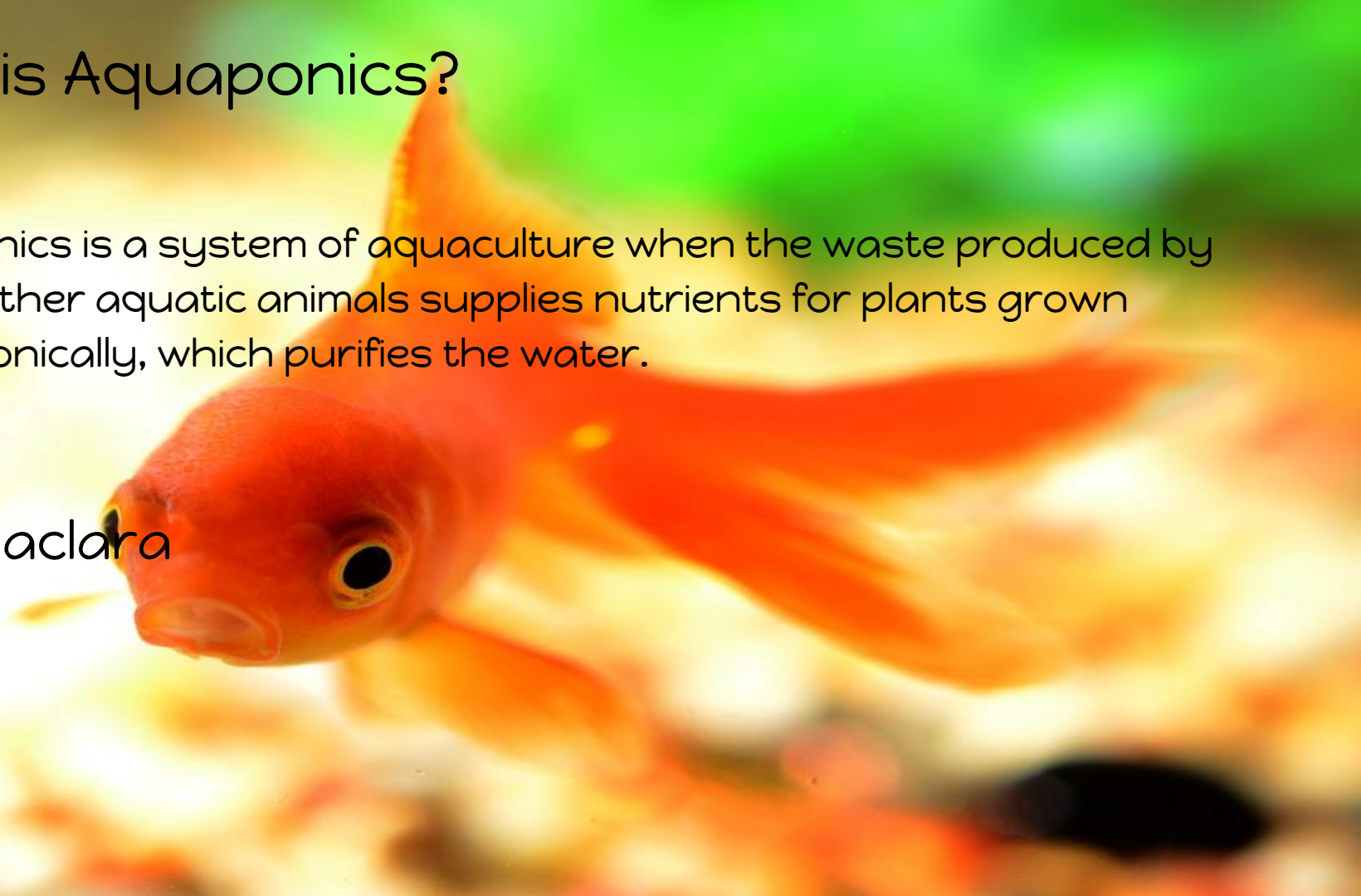
Aquaponics

BY : Izzy, Anaclara, Matteo, Robert, Sebastian,
Steffano

What is Aquaponics?

Aquaponics is a system of aquaculture when the waste produced by fish or other aquatic animals supplies nutrients for plants grown hydroponically, which purifies the water.

By :Anaclara



Where is Aquaponics used

Aquaponics is used in many places like :

- Big cities
- Farms
- Aquariums
- In school greenhouses
- And even people's homes

By Izzy

How does aquaponics work

Aquaponics uses water from the fish's waste to give nutrients to vegetables and plants . Nutrients from the fish waste feed the plants, and the plants filter the water to keep the fish healthy. The main part of the system is the fish tank.

BY: Matteo

Who would use Aquaponics

- Farmers, people who live in a city, people who live in the desert, people who live in places that don't have enough fertile land would use Aquaponics, etc.
- Basically people who would use Aquaponics don't have access to fertile land or soil.

Sebastian

What measurements were taken? Steffano

The measurements were taken at different times. For example, our first time we did measurements was in November and the first growth spurts for our plants. Throughout our time in the greenhouse our measurements were great. The plants were growing because the measurements were just the right amount.

- We measured pH because we need to make sure the water isn't too acidic.
 - If the measurements were bad we needed to add a solution to balance the pH. It should be around 7.
- We measured nitrates because too much would lead to an unhealthy environment for the fish.
 - The nitrate level should be usually less than **1 mg/L**.
 - If the nitrates are higher than **10 mg/L** will have an effect on the freshwater aquatic environment.
- We measured nitrites because too much in the water would harm the fish.
 - The nitrite level should be a low number
- We also wanted to make sure the ammonia level wasn't too high, because ammonia turns to nitrites, which then turns to nitrates. We needed to make sure the filter was doing its job in the nitrogen cycle.

Why is aquaponics used?

Compared to hydroponics, Aquaponics doesn't need chemical nutrients for the plants. The fish give three nutrients for the plant. Compared to Aquaculture Aquaponics don't have a buildup of wastes in the system that causes the water to become toxic due to nitrites.

By: Robert



What we do at the greenhouse?

In the greenhouse Mrs. Kearney teaches and helps us work in the greenhouse by splitting us up at the two tables. At one table sometimes I get to feed the fish and clean the tank. But once or twice I got to harvest the plants and replant seeds.

By Izzy

A goldfish is swimming in clear blue water, positioned behind the title and text. The fish is orange and yellow with a white stripe along its side. Its fins are visible, and it appears to be looking towards the camera.

What I did

What I did in the greenhouse is, I tested the water, we did this daily if the results were bad the fish might die, but most of the time the results were positive. I also used the hose on the plants, what this does is it takes off white bugs from the plant, these bugs take away its nutrients, and it could kill them, this could mess up the whole system. Another thing I did is I had to feed the fish, I also cleaned up their poop I don't think they want to swim in their poop. The last thing I did was I harvested the lettuce. This was an overall great experience to learn about.

BY: MATTEO

Sebastian

This was me when we got to harvest the lettuce in the greenhouse.



Anaclara

This is a picture of us
checking the plants for
White flies.



This is a picture of us
checking the P.H of the
fishes water.



Izzy

This is a picture of us

Measuring the P.H level for

The fish



This is a picture of us checking for

white flies in the lettuce



The second picture is a picture of me harvesting lettuce.

In the first picture it is a picture of goldfish.

By: Matteo

