

# TRANSFORM YOUR GARDEN WITH AQUAPONICS!

## What is Aquaponics?

Aquaponics is a style of gardening that combines aquaculture (raising fish) and hydroponics (growing plants without soil).

## Why Aquaponics?

Aquaponics reduces water consumption for plant and fish production and produces a high yield year-round in a small area. Weeding is not needed and there is a lower risk of pests and disease compared to soil-based gardening.

Plants are continuously fed with water and nutrients and all plants and fish are supplied with oxygen. If you're growing tilapia or other edible fish, you can raise them sustainably.

Fun fact: this Bell Siphon automatically drains this tank once water reaches the top of the standpipe!

Scan the QR Code below to see one in action!



## How Do I Get Started?

An aquaponics system minimally requires a plant growing bed, a fish tank, a pump, a filtration method, and plumbing parts.

It is also recommended to place the pump in a sump tank that is at the lowest elevation in the system and pump water out to the fish tank and grow bed. Water then drains back to the sump tank.

At first, a system requires a few weeks of circulating before nitrogen-reducing bacteria begin to colonize. Once they do, your system is ready to sustain fish and vegetables!



## How Does it Work?

Aquaponics is a *small-scale, intensive system* that harnesses nitrogen-reducing bacteria to convert fish waste to plant-available nitrates.

Nitrogen-fixing bacteria throughout the system convert fish waste to plant nutrients while plant roots, growing media and filtration methods purify the water for the fish.

Systems can be built affordably using repurposed tanks and plumbing parts.

## How to Use and Maintain a System

An aquaponics requires minimal maintenance. On a daily basis, fish must be fed to ensure fish and plants receive proper nutrition. A visual inspection of the system is recommended to ensure there are no leaks.

Weekly maintenance involves topping off water, germinating seeds, and cleaning the filter. Monthly maintenance involves culling roots, testing pH, and supplementing nutrients.

## Interested in Building an Aquaponics System?

Please contact us if you are interested in installing a system in your backyard.

For more info, please feel free to send an email to [ahmed@smartyardseducation.org](mailto:ahmed@smartyardseducation.org)