



**Watertown Community Gardens Hydroponic Workshop**  
**The Church of the Good Shepherd**  
**9 Russell Ave**  
**Dec 17, 2023**

# Watertown Community Gardens Hydroponic Workshop

## AGENDA

- 1 - Arrive, welcome, and introductions
- 2 - Overview of Hydroponics
- 3 - Materials and Supplies
- 4 - Building the project
- 5 - What to expect
- 5 - Resources to Learn more
- 6 - Closing



Watertown Community Gardens Hydroponic Workshop  
Overview of Hydroponics

## Soil vs Hydroponics

In Soil Growing you are getting the nutrition for the plants out of the soil.

In Hydroponic Growing the nutrition for the plants comes from the plant food.

The challenge that hydroponics introduces is how do you support the roots/plant.



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### Overview of Hydroponics

Hydroponics is the method of growing plants in a water based solution rather than planting in soil.

There are many commercial products you can buy to use as a home Hydroponic garden system.

Examples :

Liquid Hydroponic systems have no supporting medium for roots to grow in. Plant food is pumped through the system with tubes.

Aggregate Hydroponic systems use rockwool or sand or expanded clay pebbles ( this is what we will be using for this workshop)

Aggregate systems have two categories -

Passive systems uses a system of wicks to draw the water enriched with plant food into the clay pebbles for the roots to access.

Active systems have the root system suspended on a suspended platform where an air pump airates the water with air bubble similar to an aquarium.

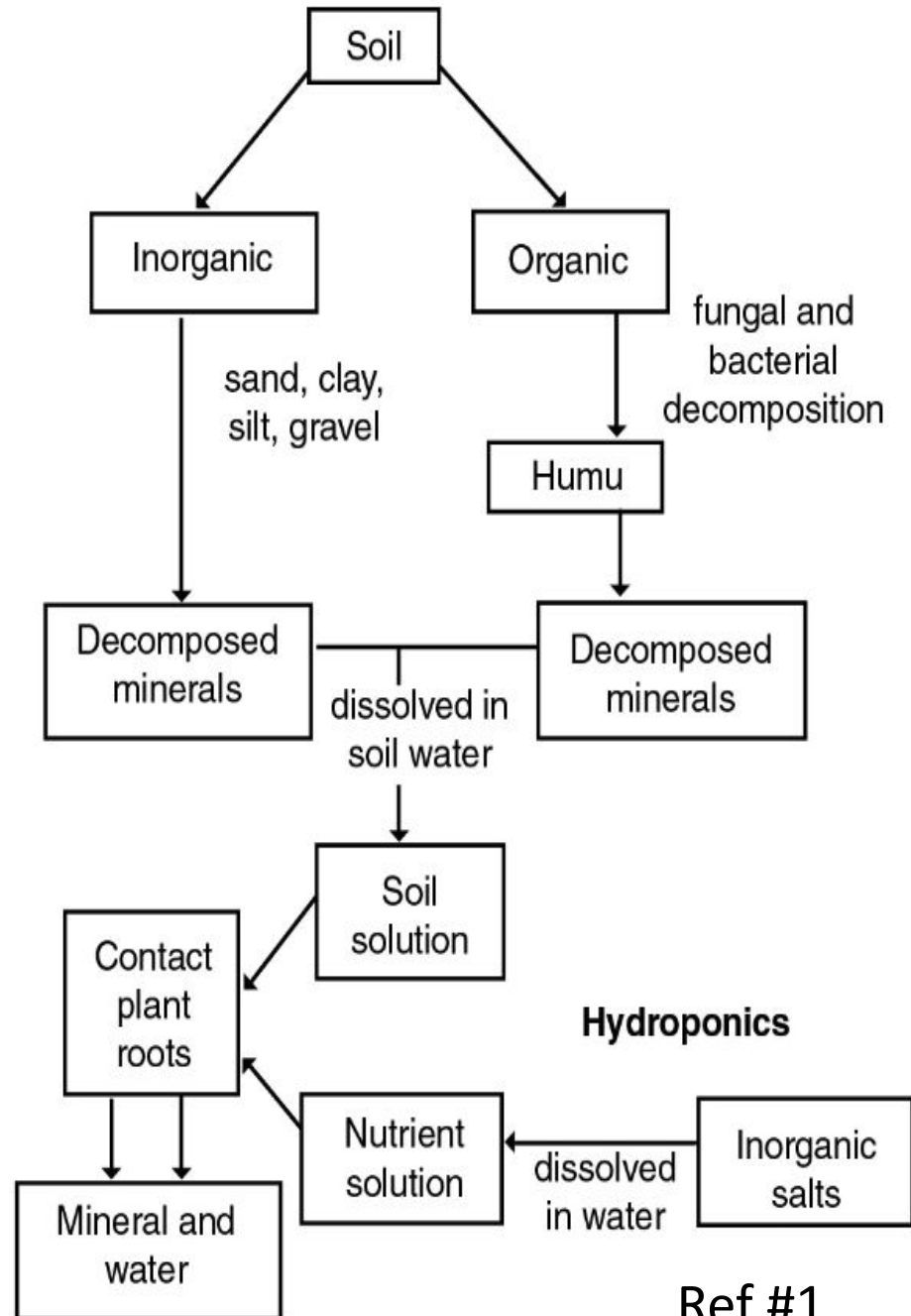


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## Overview of Hydroponics

### Soil versus Hydroponics

There is no physiological difference between plants grown hydroponically and those grown in soil. In soil, both the organic and inorganic components must be decomposed into inorganic elements before they are available to the plant. These elements adhere to the soil particles and are exchanged into the soil solution where they are absorbed by plants. In hydroponics, the plant roots are moistened with a nutrient solution containing the same elements. The subsequent processes of mineral uptake by the plant are the same.



Ref #1



We are using a **passive system** that uses a wick to pull plant food up into the expanded clay pellets.

The wicks have a distance limit of 7-8 inches if the wick dries out you need to wet it again or it will not work .

We need to keep the Plant food in the dark so that algae doesn't grow in it - that is what the bags are for - some people paint the jar a dark color, but that makes it hard to see if you need to add more plant food.



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Materials and Supplies

Our Materials :

Wide mouth Mason Jar

Length of wick

Basket to hold the growing  
medium

Clay Balls

Black bag

Seeds

Plant food



Our Materials :

**Wide mouth Mason Jar** - container for the whole system

**Length of wick** - pulls plant food up to where the roots will develop

**Basket** - to hold the growing medium

**Clay Balls** - provides structure to support the plants

**Black bag** - keeps the plant food from growing algae (this would make the plant food ineffective)

**Seeds** - some thing to grow

**Plant food** - Nutrients for the plants





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Building the project

## Assemble your Hydroponic pot

- 1) cut the wick to ~7 inches
- 2) feed the wick through the base of the growing cup allow space at the top
- 3) fill the growing cup with clay balls (the wick should be mixed in with the clay balls - not just at the bottom of the cup)
- 4) set the cup in the top of the jar
- 5) fill the jar  $\frac{1}{2}$  way with plant food (slowly pour through the clay balls)
- 6) add seed
- 7) cover with plastic wrap
- 8) put the ring on the jar
- 9) put the jar in the bag
- 10) place your hydroponic planting system on a windowsill or under a grow light (I set a timer for 15 hours a day)



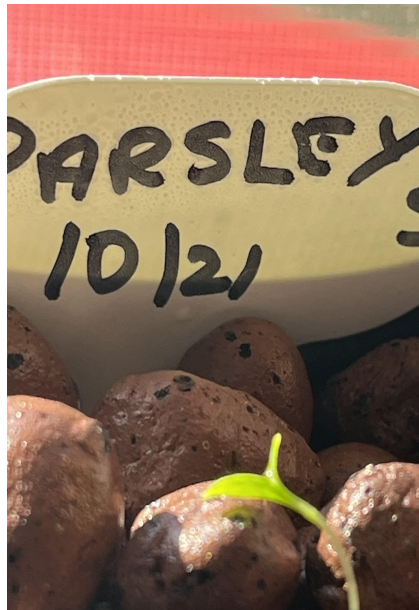
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## What to expect

Cover with Plastic Wrap until to keep the seeds moist until you see sprouts



After 3 weeks - Sprouts are emerging and you can remove the plastic



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## What to expect

After 6 weeks



References:

1. <https://extension.okstate.edu/fact-sheets/hydroponics.html#soil-versus-hydroponics>





**What are your thoughts?  
Suggestions?  
Comments?**

**Email us: [info@watertowngardens.org](mailto:info@watertowngardens.org)**