



Hydroponics

By: Leah, Luke, David,
Anna, and Dylan

What is hydroponics?

Hydroponics is the process of growing plants without soil. For example, gravel, sand, and liquids with added nutrients are commonly used in hydroponics. This directly gives the plants the nutrients they need.



This plant is being grown using clay pellets and water.

By: Anna

How does hydroponics work?

"Hydroponics does not use soil, instead the root system is supported by an inert medium such as perlite, rockwool, clay pellets, peat moss, or vermiculite. Hydroponics is a branch of agriculture where plants are grown without the use of soil. The nutrients that the plants normally derive from the soil are simply dissolved into water instead, and depending on the type of hydroponic system used, the plant's roots are suspended in, flooded with or misted with the nutrient solution so that the plant can derive the elements it needs for growth."

Where is hydroponics used?

Hydroponics is used in major cities so it saves room and the big major companies don't have to ship it around the world. It is much better for the environment and it can easily be made into a system that grows by itself and it takes up much less room than normal farms and you are able to get fresh organic plants all year around.



By: Luke

Why is Hydroponics Used?

Hydroponics is used because it is a lot healthier for plants than regular planting. It eliminates diseases in the soil which leads to using less pesticides which then leads to reducing soil erosion. Hydroponics allows plants to grow in places with not much space or soil.



This is where the plants grow.



Plants grown with clay pellets.

By: Leah

Who would use hydroponics?

Hydroponics would be used by farmers who want to save money and want a healthier way to farm plants. This saved money because the water, nutrients and the pipes are cheaper to buy than fruits and vegetables in the long run. Hydroponics can also be used by people who want to grow their own fruits and vegetables.



By: David

What does hydroponics look like in the WMS greenhouse?



We watered the hot pepper



What did each person do while in the Greenhouse?

In the Greenhouse I:

- Sprayed the plants with water to help them grow and stay healthy.
- Took the Ec and Ph reading of the water so the fish and plants have perfect, healthy, and not too acidic water to use.
- Checked for WhiteFlies and shook them off so they would not eat the plants.
- Measured the height of the plants to make sure they were growing healthy.
- Planted seeds for new plants to be grown.



We always have to check for white

flies so they do not eat away the plant

What did each person do while in the greenhouse?

WHILE I WAS IN THE GREENHOUSE I:

1. I TESTED THE PH AND EC READING SO THE FISH COULD HAVE GOOD WATER
2. SPRAYED THE PLANTS SO THE BUGS COULD GET OFF
3. MEASURED THE PLANTS
4. CHECKED FOR BUGS LIKE WHITE FLIES SO THEY WON'T EAT/HARM THE PLANTS
5. MEASURED THE PLANTS TO MAKE SURE THEY ARE GROWING
6. PLANT SEEDS SO WE HAVE MORE PLANTS
7. WATERED THE PLANTS SO THEY COULD GROW AND STAY HEALTHY

What did each person do while in the greenhouse?



Every time we went to the green I measured the corn and the hot peppers and I also took photos of the plants 2 times.

Measuring the plant

By Luke

What did each person do while in the greenhouse?

While in the greenhouse I:

1. Tested the ec reading of the water to make sure the water is healthy.
2. Tested the ph reading of the water to make sure there is no acid in the water.
3. Sprayed the plants with water to get the bugs off.
4. Measured the plants to make sure they are growing.
5. Checked all the plants for bugs like whiteflies so they didn't eat/harm the plants.
6. Plant seeds so we have more plants.
7. Watered the plants so they can grow and stay healthy.

By: Leah



Measuring the plants.



The ec and ph reading of the water.

What did each person do while in the greenhouse?

Every day I went to the greenhouse I had to take the pH and EC reading. A pH reading is the level of nutrients in the water that the plants are used to be watered. The EC of the water stands for Electrical Conductivity. I also had to measure each plant to see how much it had grown over a week, I had to see if whiteflies got to the plant. I had to do this because it was the standard care for plants that survive on the system of hydroponics.



By:David

Measurements

By: Anna

Corn 1	Corn 2	Corn 3	Corn 4	Sweet Pepper 1	Sweet Pepper 2	Hot Pepper 1	Hot Pepper 2	Tomato	EC	PH
Day 1: 165 cm	Day 1: 150 cm	Day 1: 116 cm	Day 1: 62 cm	Day 1: 20 cm	Day 1: 39 cm	Day 1: 51 cm	Day 1: 45 cm	Day 1:	Day 1:	Day 1:
Day 2: 160 cm	Day 2: 147 cm	Day 2: 115 cm	Day 2:	Day 2: 22 cm	Day 2: 29 cm	Day 2: 57 cm	Day 2: 52.5 cm	Day 2: 47 cm	Day 2:	Day 2:
Day 3:	Day 3:	Day 3:	Day 3	Day 3: 36 cm	Day 3: 49 cm	Day 3 70 cm:	Day 3: 64 cm	Day 3: 83 cm	Day 3: 2.4	Day 3: 7
Day 4:	Day 4:	Day 4:	Day 4:	Day 4: 45 cm	Day 4: 65 cm	Day 4: 90 cm	Day 4: 72 cm	Day 4: 114 cm	Day 4 3:	Day 4: 7
Day 5:	Day 5:	Day 5:	Day 5:	Day 5: 37 cm	Day 5: 46.5	Day 5: 94 cm	Day 5: 62 cm	Day 5 96.5	Day 5: 3.2	Day 5: 7

Measurements

The measurements of the plants were fairly good. Many of them were growing quickly and healthy. This means that we could have more results/food faster. For example, on days 2-3, the tomato plant grew 36cm in one week. On the other hand, some of the plants weren't doing as well. Some of them were being eaten by whiteflies which made some of them die. For example, we sadly had to take down the corn plants by Day 3 because they were not growing healthy and the corn was not looking very good. Over the results of the measurements were ok.



Here we are measuring one of the plants.

By: Anna

What are your thoughts about hydroponics?

I think hydroponics is healthy, safe and very useful. I feel that everyone should use it because it eliminates diseases in the soil, which means using less pesticides. Hydroponics also saves space when planting. Overall, hydroponics is helpful and healthy. It is better than regular planting and should be used more often.



This is how the plants are being grown (across the ceiling).

By: Leah



Another way the plants are being grown.