

Introduction to Hydroponic Gardening

Subject area: Farm to School

Objective:

- Define hydroponic gardening
- Describe advantages of hydroponic gardening
- Describe how it is a sustainable alternative to traditional gardening

References:

- Farm Shelf Curriculum
- Towergardens.com
- Greenourplanet.org

Audience: Students

Student Grade: Middle School or High School Grades 6-12

Duration: 30 minutes

Location: Classroom or cafeteria

Materials Needed: Working FarmShelf or Tower Garden

Preparation before the Lesson: none

Lesson/Event/Activity:

Has anyone heard of hydroponic gardening? Please raise your hands. Would anyone like to volunteer a definition? Allow time for volunteers and choose from hands raised.

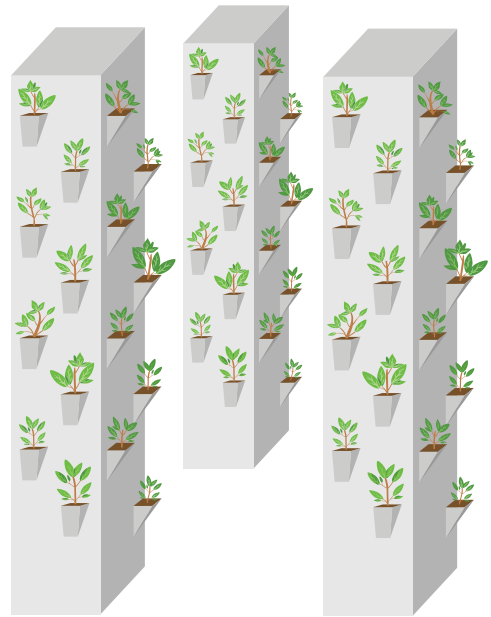
That's right, hydroponic gardening is a recycled water farming system that uses no soil. Successful hydroponic gardening must be able to provide plants with all of their conventional needs that they would find in an outside environment. The word hydroponic is a combination of the Latin words "hydro" which means water and "ponos" which means work.

What are the necessary elements for plants to grow?

- Nutrients-Instead of nutrients in soil it uses a liquid nutrient solution
- Light-Instead of sunlight it uses lighting systems that mimic the sun such as LEDs

Show students the type of gardening used in their school, either FarmShelf or Tower Garden.

What are the benefits of this type of gardening?



ANSWERS

Benefits of Hydroponic Gardening Worksheet

For each topic below, please write a brief description underneath explaining the benefit of hydroponic gardening.



Water

System uses less water than conventional gardening



Soil

Uses water instead of soil so can be used where there is no soil or is poor quality for growing



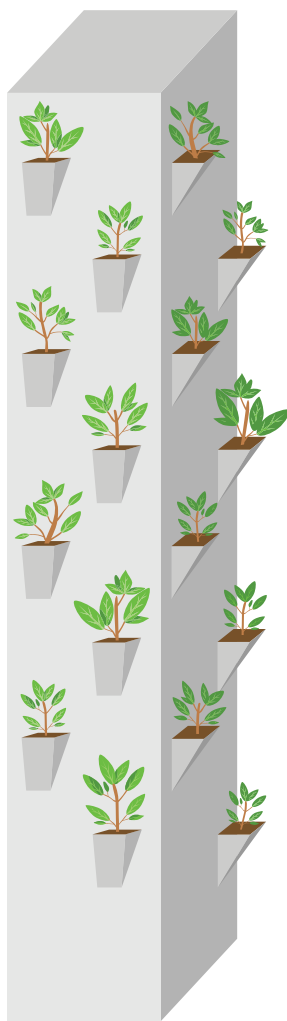
Space

Can be used where there isn't enough space outside for traditional gardening



Weather

Can be used inside where climate is controlled and therefore can be used where and when weather is not favorable



Growing Cycle

Many plants can grow twice as fast than conventional gardening



Access

Indoor gardens can provide people access to fruits and vegetables in food deserts



Transportation

Food does not need to travel long distances from harvest to plate



Crop Diversity

Plants may be grown in locations where they may not survive outside



Pesticides

No chemical weed or pest control products are needed

Benefits of Hydroponic Gardening Worksheet

For each topic below, please write a brief description underneath explaining the benefit of hydroponic gardening.



Water



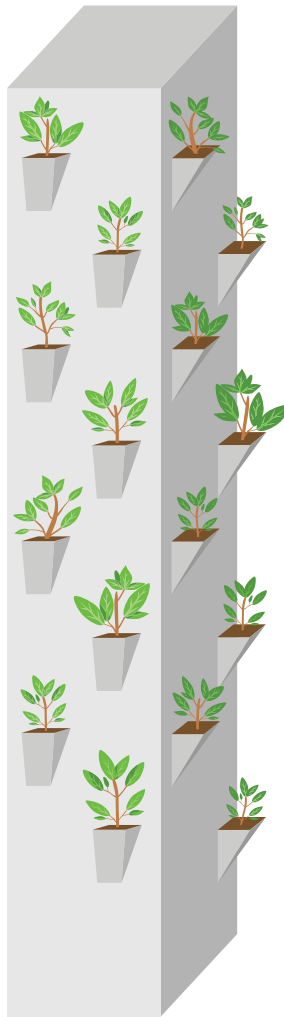
Soil



Space



Weather



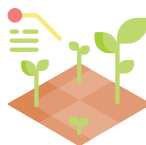
Growing Cycle



Access



Transportation



Crop Diversity



Pesticides

Why Hydroponic Garden?

Decreased time
between
harvest
&
eating


3 - 10x more
production in the
same amount
of space

Up to
90% more
efficient use
of water



Many crops
can be produced
twice as fast

farms can exist
in places
where they would not
traditionally
due to unfavorable
weather


No chemical weed
or pest control
products needed

