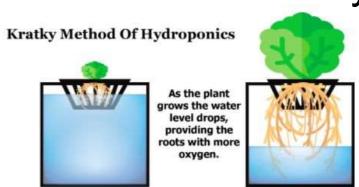
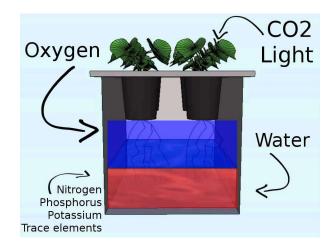
Hydroponics (Kratky Method)

By: Nathan Pham





THE KRATKY METHOD

WHAT YOU NEED:

RESERVOIR NETPOTS HYDROPONI(NUTRIENTS WATER SEEDLINGS





AIR AND ROOTS

NUTRIENTS AND ROOTS

NUTRIENT RESERVOIR

Service Project Benefits

- When you teach students how to grow their own vegetables, they'll get a sense of pride in eating what they "created." This, in turn, will show the importance of healthy eating.
- Gardening promotes the students to try growing and eating healthy foods (like fruits or vegetables) at home.
- Gardening is a science and teaches lessons from biology, chemistry, and botany (study of plants) with the teacher(s).
- Students will also learn how to be patient, as it takes time to grow a plant.
- Gives students self-confidence as they grew something they can eat (after it has been washed)





Service Project Benefits (con't)

- It saves space Roots do not spread since water and nutrients are available
- Conserves water Delivered in a control way
- Fewer pests and chemicals Less uses for herbicides and pesticides
- Can grow indoors to grow year-round, temperature and climate control, and fewer pests.
- Healthier Plants Soil-borne diseases aren't an issue in hydroponics because there is no soil for those diseases to fester and spread in. and they spend more time growing



Kratky Hydroponics Kit

+ 6 - 8 grow boxes (24 or 30 inches long)

+ 36 - 48 net cups/pots

+ 36 - 48 pool noodle disks

+ 1 - 2 Blend-A nutrients

+ 1 - 2 Blend-B nutrients

+ 2 5-gallon buckets

+ Pvc rack or mobile

rack



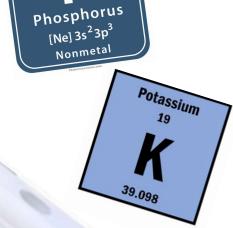








Vitrogen 14.007





COVID Safety Measure

- In maintaining distance, each student transplants their own seedling onto the net cup in their own seat
- In minimizing close contact, the grow-box is passed from one student to another to place their net cup onto
- Upon completing the placement of net cups per team, a designated student move their team/group grow-box to a rack for storage

Materials and Supplies list

Materials list

+3x4 Amerimax white downspout

+3x4 end caps

+pvc pipes, nineties, t-couplers

+mobile racks/stand

+pool noodle

+net cups/pots

+5-gallon buckets

+Rectangular Translucent Plastic Storage Containers with Lids SKU: 110539

Supplies list

+silicone tube

+4-18-38 masterblend bag (Blend A)

+15.5-0-0 powergrow bag (Blend B)

+epsom salt bag (Blend B)

+food safe (resin) coating

+spray paint (depending on the schools colors)

+paint (depending on the schools colors)

+footers

Other

- How many people will be needed to help: Approximately six to eight people
- Tools: Hand Saw, Silicone caulking gun, Scissors, Utility knife/Pocket Knife, Wired/wireless drill, Foam Paint Brush
- Logistics: Family members will assist in the transportation of materials and helpers. Parents will pick up and drop the helpers at the designated location.
- other needs: I plan to use the 3D printing service from the San Diego Public Library.
- safety issues: Helpers need to bring PPE (minimal PPE will be available)
- (preliminary) cost estimate: \$732.70 (total
- permits/permissions: I believe that permits or permissions are not needed for this project

Deliverables

2 kits will go to salk and mason (not in total):

- 6 grow boxes (24 inches long)
- Blend A & B Nutrients
- 2 5-gallon buckets
- Portable Rack (PVC)

Leadership Plan

- Edge method
- Servant leadership
- Communication skills
- Project Management

Build/Labor Plan

Stations

- Cutting downspouts
- Cutting PVC pipes
- Drilling holes into downspouts
- Organising the kits
- Mix the blends
- Applying paint and food grade coating
- Applying silicone to end caps

Work period

- 3 Man-hours per shift
- 6 People per shift
- 2 Shifts per day
- 5 days in total
- 10 shifts in total

Questions



