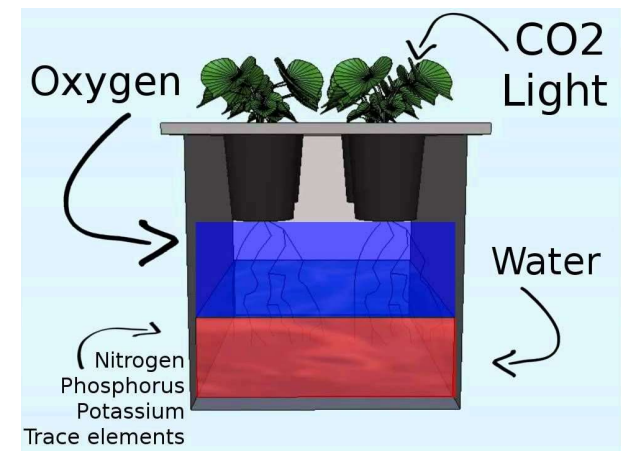
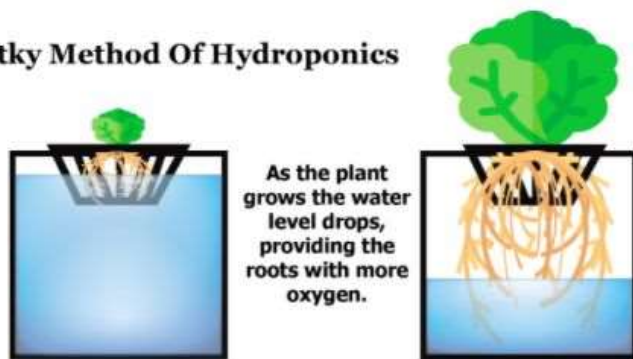


Hydroponics (Kratky Method)

By: Nathan Pham

Kratky Method Of Hydroponics



THE KRATKY METHOD

WHAT YOU NEED:

RESERVOIR

NET POTS

HYDROPONIC NUTRIENTS

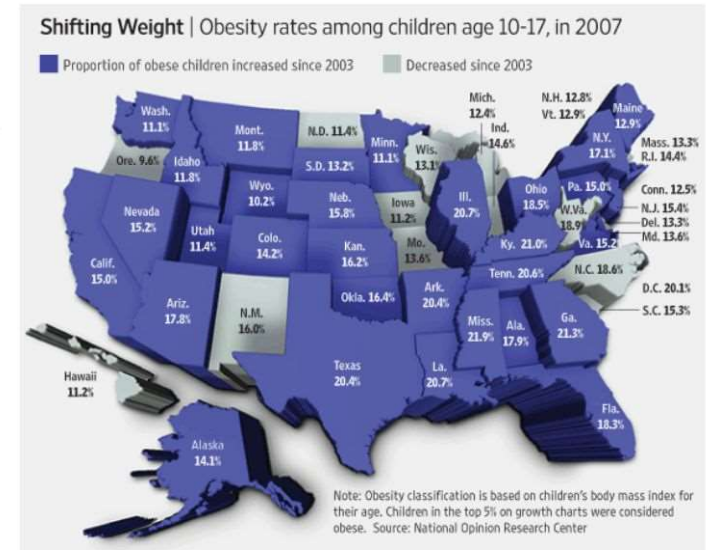
WATER

SEEDLINGS



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)**



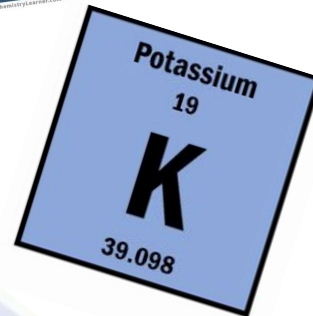
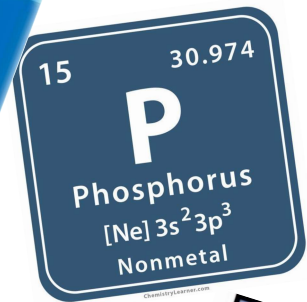
Service Project Benefits (con't)

- **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



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



