



*How many ways can you
use 5 gallons of water?*

Multidimensional Water Delivery System

Navigating a journey of inquiry and construction of a water conservation educational tool

Curiosity and Collaborations

How to address the need for a water conservation teaching tool

Green Dragon Conservation Education

Feed and Be Fed

Pictures and conversations

Conversations with GDCE and FABF RE: Little Sprouts' need for access to independent water system

Began to sketch possibilities keeping in mind the need for mobility

Research and enthusiasm gained with EECF

Time to Produce

Deciding on design and materials

Let the building begin

Success!

Addressing the need for a water conservation teaching tool

My engagement in the Environmental Educators Certification Program provided the impetus for creating the Multidimensional Water Delivery System (MWD System)

Little Sprouts needed their own independent source of water delivery in order to conserve water in the Little Sprouts garden.

Conversations with both Green Dragon Conservation Education and the Little Sprouts program director were positive and encouraging.

My mission was to explore potential designs while intentionally being mindful of how much water was being used.

Collaborative Partnerships Essential



Stimulate Your Brain with Coins of Curiosity

- *How many ways can you use 5 gallons of water?*
 - *How many cups are in 5 gallons of water?*
 - *How many ounces are in 5 gallons of water?*
 - *How many liters are in 5 gallons of water?*
 - *How much water does it take to clean a dozen fresh carrots?*
 - *How much water does it take to water my garden bed?*
 - *How much water does it take to wash my hands and face?*
 - *How much water does it take to make a batch of bubbles?*
 - *How much water does it take to cook pasta?*
- Why do I care?*
- Who needs to know?*
- Where will I use this input?*
- What is measured in liters?*
- How clean is 'clean'?*
- How big is the garden bed?*
- Do I need to wash them?*
- What size are the bubbles?*
- Where does pasta water go?*

Percolating Ideas



Initial foot pump design

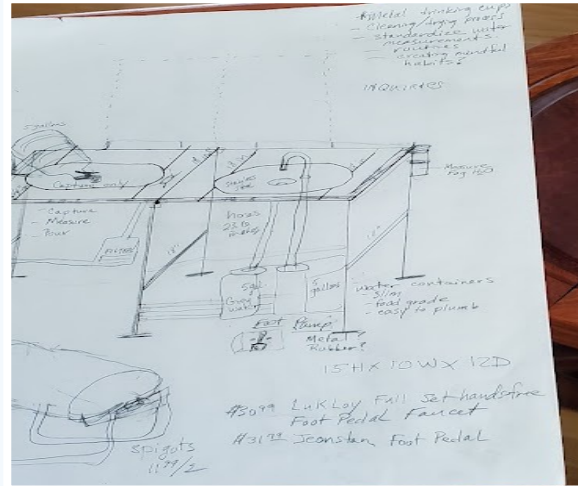


Gravity Fed design came easily

Pictures and conversations



Little Sprouts program at the 6th Street Feed and Be Fed Garden in San Pedro, CA



Initial drawings of a Multidimensional Water Delivery System



Materials and tools gathered as the design was chosen

Research and Enthusiasm Gained with EECP

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NSTA recommends
National Science Teachers Association

Project WET
Curriculum and Activity Guide 2.0

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Project WET
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[Project Wet](#)

Provided accessible and interactive resources



naaee

North American Association
for Environmental Education

[NAAEE](#)

Provided resources to encourage the creation of an equitable and sustainable future

Time to Produce



After gathering $\frac{3}{4}$ " PVC pipe (50 feet to start) and connectors, the building began!



The system begins to take form.



Added the fog catcher. Thank you to Kurt Holland (mentor) for brainstorming this idea!

Production Continues (November 2022 - February 2023)



Suspending basins on the structure was a challenge. Critical thinking a must!



Foot pump basin and gravity fed basin are in place.



System completed and ready for field testing!

Successful Field Testing



Field test began in FABF Garden in San Pedro, CA.



Well, glad we did that! Wind and rain storm versus the MWDS. Appropriate modifications made in response.



The system was a great success at the POLA High School Green Festival. Thank you Jedi!



Success of water conservation exploration!

*Little Sprouts now have a
mobile, independent source of
water in the garden!*



Thank you for joining me
on this journey of inquiry
into water conservation!!

Sandra Field
Director of Curriculum and Education
Green Dragon Conservation Education