



# Monterey Bay National Marine Sanctuary Advisory Council

## October 18, 2019

Office of National Marine Sanctuaries  
National Oceanic and Atmospheric Administration

NOAA OCEAN GUARDIAN SCHOOLS



TO LEARN MORE, VISIT: [SANCTUARIES.NOAA.GOV/EDUCATION/OCEAN\\_GUARDIAN](https://sanctuaries.noaa.gov/education/ocean_guardian)



*Protecting our ocean one school at a time*

# THE OCEAN GUARDIAN SCHOOL PROGRAM...

Engages schools in the protection of local watersheds, the ocean and special ocean areas like national marine sanctuaries

HANDS-ON projects on school campus and/or in the local community



Through these hands-on projects, students experience how they can effect real change to help protect the health of our marine environments.



School communities include teachers, staff, parents, partner organizations and surrounding neighborhoods

# Schools propose *hands-on* projects that connect to one of the 5 project pathways



## Refuse/Reuse/Reduce/Rot/Recycle/ **RETHINK**

school-wide recycling/composting programs, school-wide green purchasing program, zero waste lunch programs

## Marine Debris

reducing single-use plastics in school/community, promoting reusable items in local community



## Schoolyard Habitats/Gardens

creating or improving school gardens/schoolyard habitats with an emphasis on native plants, low water use, rain catchment systems, etc. while clearly connecting these activities to the health and preservation of the local watershed and/or the ocean.

## Watershed Restoration

watershed/wetland restoration, fish habitat creation, shoreline/bank stabilization

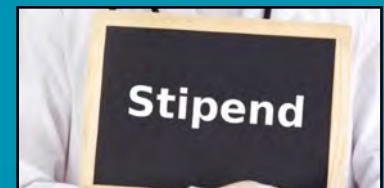
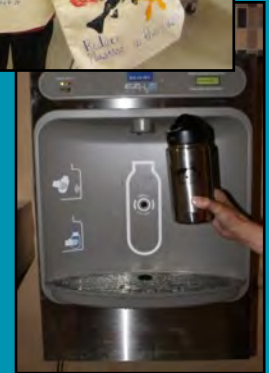
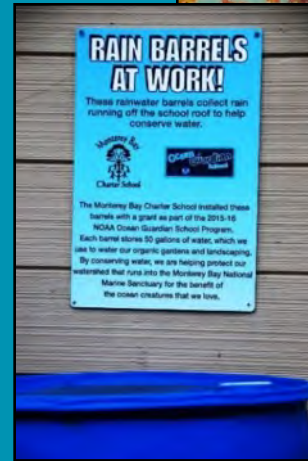


## Energy & Ocean Health

Reducing energy use/carbon footprint such as school energy audits/carbon footprint calculations resulting in energy saving plans (i.e., "power down" campaign, "no idling" campaign, bike to school days, light bulb/computer energy saving plans, etc.), clean energy alternatives (i.e., wind/solar projects), tree planting projects.

- Grants are awarded for up to \$4,000 per school depending on the level of the project and funding year.
- Schools may re-apply for funding for a *single project* for up to 5 successive years. Funding steps down in years 4 and 5 to encourage project sustainability.
- Schools may submit applications for projects that DO NOT require funding.

## Grant award will fund...



# Program Requirements

## SCHOOL PRESENTATIONS

### Project introduction



### Project wrap-up

**"What a Wonderful Creek!"**  
Original Lyrics by 3rd Grade Class,  
Willow Creek Academy  
2013

I see bracken ferns, sword ferns too  
Wild strawberries for me and you  
And I think to myself, what a wonderful creek!  
Willows and horsetails blow in the wind  
I hear the song of the red breasted robin  
And I think to myself, what a wonderful creek!  
This is the landscape where the deer like to play  
And salmon and bears, before they were chased away  
The Miwoks used poison oak to make tattoos  
And bay leaves to hunt, even on their shoes  
I see salamanders and raccoons  
Newts, mayflies and woodpeckers, too  
And I think to myself, what a wonderful creek!  
Let's clean up the trash, make sure we do our part  
There's so much history here, there's so much heart  
We want the fish to come back, the birds to sing  
The humans to love without hurting anything  
I hear water run, I watch it flow  
I've learned much more than I thought I'd know  
And I think to myself, what a wonderful creek!

**LIFE OF WETLANDS**

Water flows in  
Estuary Full of Fish  
Tidal Waves Roar  
Life is Every where  
Animals Roaming  
Nature is Light  
Deep in the Marshes  
Shorebirds are fishing

-6th grade student,  
Will C. Wood Middle School, Alameda, CA

## OUTREACH

### Internal Outreach

**We are an Ocean Guardian Classroom**

**Ocean Guardian School**

- We pledge to use reusable water bottles
- We pledge to use reusable bags.
- We pledge to not use single use straws or balloons.
- We pledge to keep trash off the ground.
- We pledge to keep our waterways and ocean healthy & clean.
- We pledge to help leatherback sea turtles & other marine animals

*Handwritten signatures and drawings of a sea turtle and a crab are visible at the bottom of the pledge.*

**Sandwich BAGS**

Best good worst

- Metal containers with lid
- Fold up pouch
- Compostable zip bag
- Ziplock plastic bag
- Fabric bag
- Compostable paper bag
- Cling wrap

### External Outreach



**Keep your butts out of the bay**

Protect the San Francisco Bay Watershed!

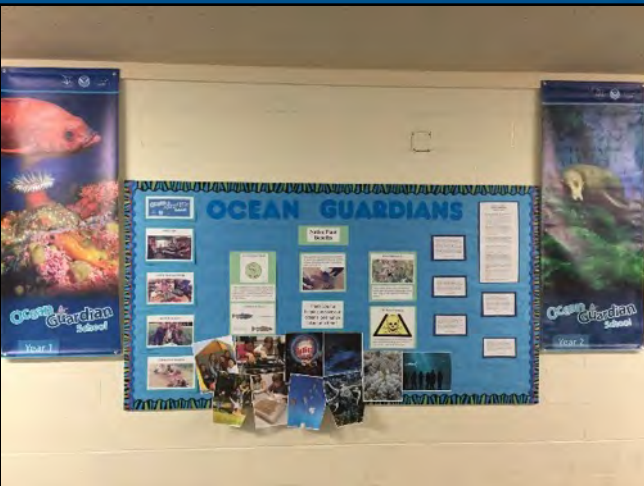
A message from  
Wood Middle School Environmental Science Students in Alameda, California

**THE DRAIN IS JUST FOR RAIN**

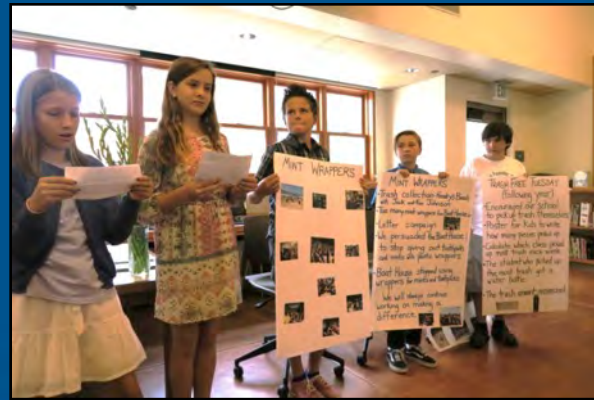
**Ocean Guardian School**

BCS\_Eco #BCS\_Eco · Dec 5

presenting today @singleuseplastics & reducing marine debris #mbaqed @MontereyAq @sanctuaries #oceanguardians



Internal Outreach ✓



# Keep your butts out of the bay

Protect the San Francisco Bay Watershed!

A message from  
Wood Middle School Environmental Science Students in Alameda, California



# External Outreach



June 3, 2011

Alameda Sun  
32157 Encinal Ave  
Alameda, CA 94501

Dear Alameda Sun,  
If people are trashing the bay, then they are hurting the sea animals. When we eat the sea animals, it can hurt our body systems. So, if we don't litter, then it won't go to the ocean and won't hurt ocean animals. If we use the 3-stream recycling, then its better for our health and the ocean. It's less trash in the landfill. With summer coming, let's all use the 3-stream recycle.

Sincerely,  
*Kathy Tran*  
Kathy Tran  
6th grade SLWRP (Service, Learning, Waste, Reduction, Project)  
Will C. Wood Middle School

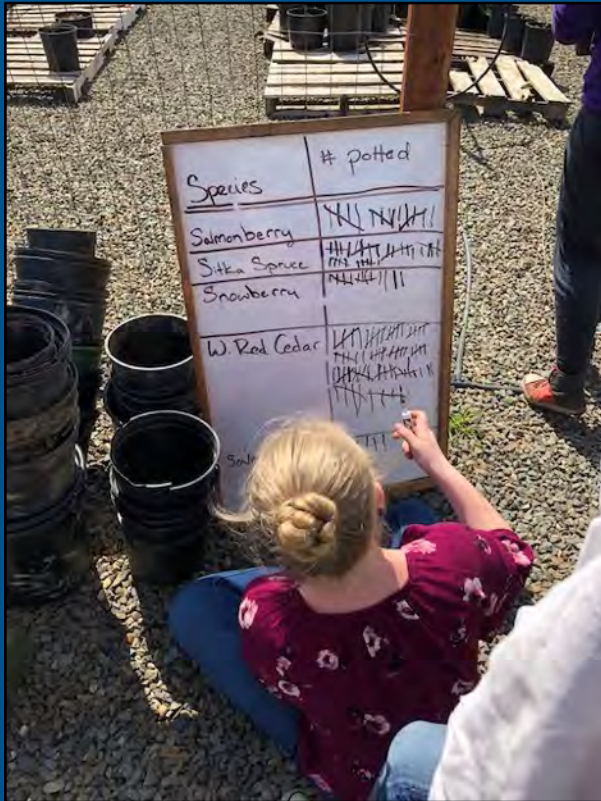




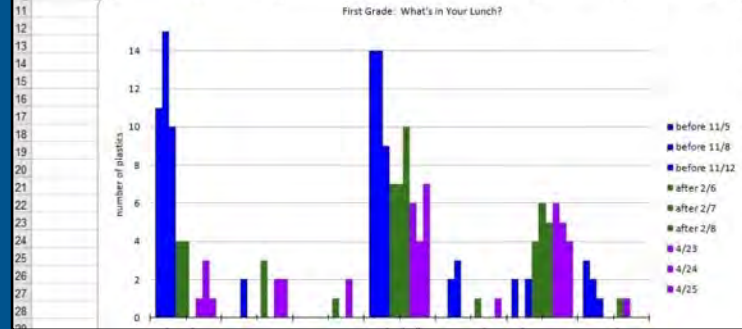


Mosaic by: Mary, Tracy, Amy, Lisa, April, T. King, Amy, Jo, Zola, A. Perry, Jill, John, DANC, Aida, Guy, Tom, Ruth, SAM, DIANA, C. Bayla, Holly, 2, 1997, Jennifer, Denise, F. Bay, Denise

# Measurable Data



Date	Plastic bags	Beverage bottles	Straws	Individually wrap Utensils	Plastic cups	Drinks
before 11/5	11	0	0	14	0	2
before 11/8	15	0	0	14	2	0
before 11/12	10	2	0	9	3	2
after 2/6	4	0	0	7	0	4
after 2/7	4	0	0	7	0	6
after 2/8	0	3	1	10	1	5
4/23	1	0	0	6	0	6
4/24	3	2	2	4	0	5
4/25	1	2	0	7	1	4



ecoblitz CALIFORNIA

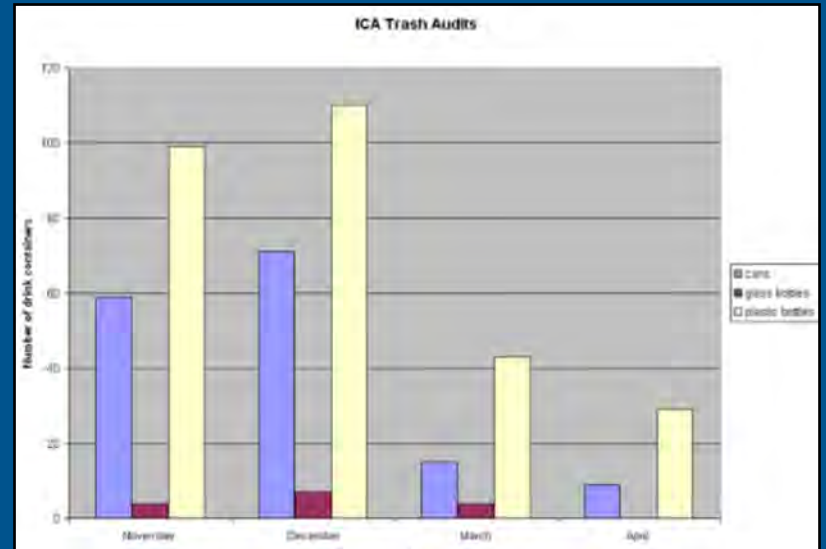
Data Collection Sheet for TrashBlitz Fieldwork

Use tally marks to count the trash you find.

Location Identification  
 1 = school  
 2 = park  
 3 = creek/river  
 4 = beach  
 5 = other

NOTE: Scan the QR code or enter bit.ly/ecoblitzCA to access Survey123 to upload data.

Location	Date	time of day	glass	metal	paper/cardboard	plastic	other trash
1	3-30-16						



## Ocean Guardian Schools 2010-2019

Awarded Grants	\$1,074,367
Number of Participating Schools *Schools that received more than one grant are only counted one time	134
Number of Participating Students *Number reported from participating schools, not school districts	61,936
Number of Participating School Districts	2
Number of recycle bins installed	1070
Number of compost bins installed	530
Kilograms of compost made from school food/garden waste	927.14
Kilograms of recycled e-waste	2,322.85
Kilograms of reused oyster and clam shells	2,721.55
Kilograms of trash/debris removed from campus and/or from out in the community	149,651.14
Number of reusable bags (grocery bags, snack bags, etc.) distributed	12,929
Number of reusable bottles distributed	23,801
Number of single use plastic bottles NOT used due to use of reusable bottles at filtration station	726,544
Number of rain barrels installed	107
Liters of water reclaimed from use of water catchment system	88,138.13
Number of native trees planted	5142
Number of native perennials/grasses/annuals planted	41,302
Square meters of native plants planted	55,818.89
Square meters of non-native invasive plants removed	51,655.81
Square meters of turf removed	3,876.42
Linear meters of bank stabilization	1,238.94
Number of wildlife habitat structures installed	198
Number of LED or energy saving bulbs installed	46
Number of bike-to-school days	173
Number of stenciled storm drains	63

Office of National Marine Sanctuaries  
National Oceanic and Atmospheric Administration



# Ocean Guardian School

Protecting the Ocean  
One School at a Time

## PROGRAM REACH • 2018 - 2019



**10,060**  
students

**53**  
schools



"Students were empowered to make positive changes in their everyday environment."



**361** teachers/staff



Serving  
**26**  
schools  
with under-  
represented  
students

**176** COMMUNITY PARTNERS

**\$162,777**  
GRANTS

Funding coordinated by:  
 National Marine Sanctuary Foundation

## TOTAL IMPACT • 2010-2019

**149,651**  
KILOGRAMS OF TRASH COLLECTED

**36,730**  
REUSABLE BAGS & BOTTLES DISTRIBUTED

**1,600**  
RECYCLE & COMPOST BINS INSTALLED

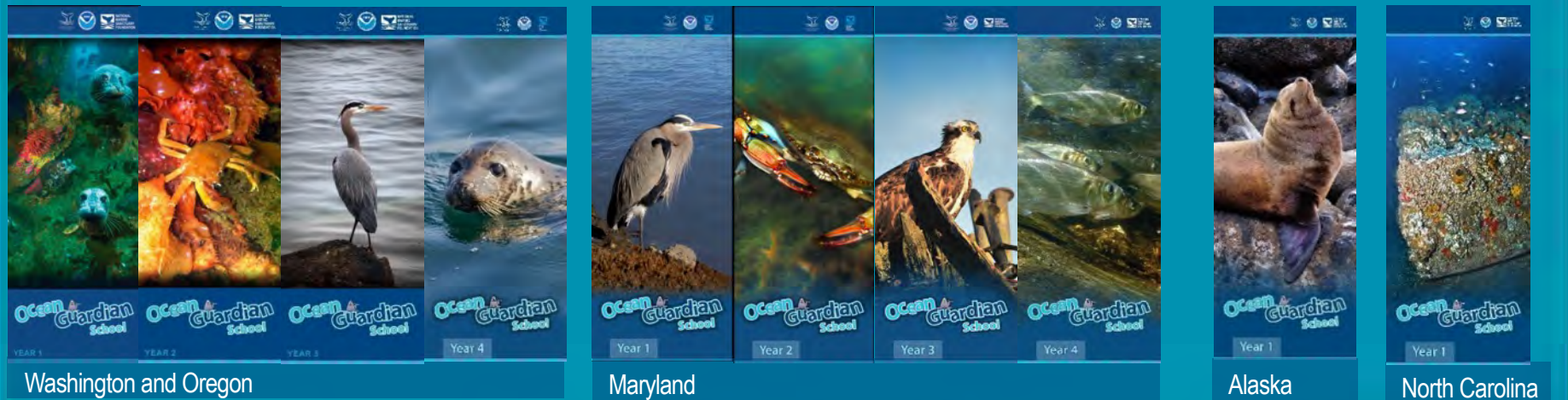
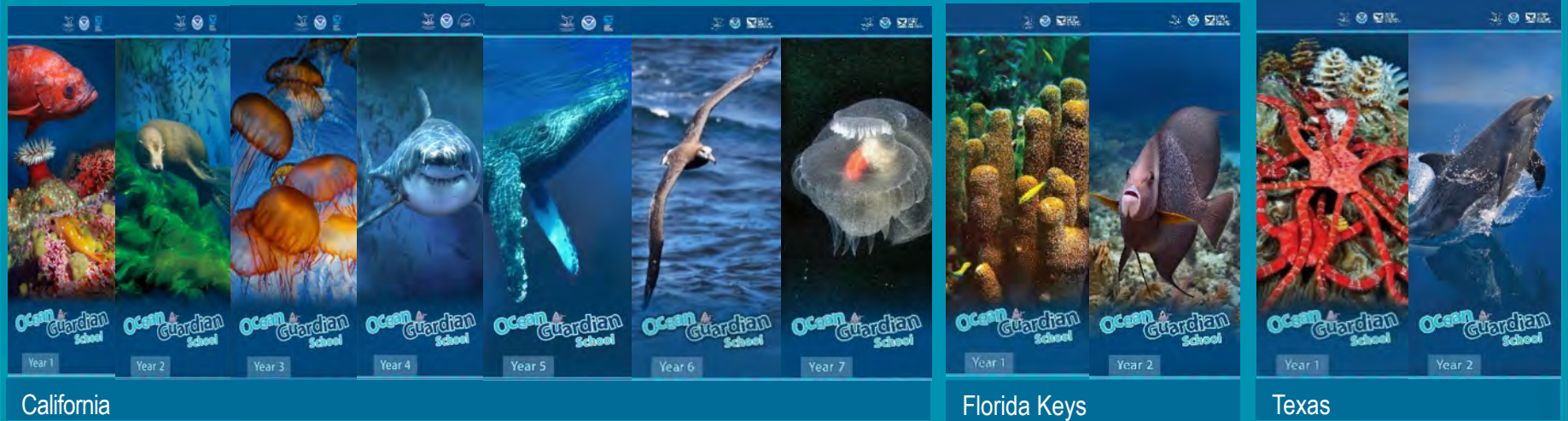
**726,544**  
SINGLE-USE PLASTIC BOTTLES NOT USED

**55,819**  
SQ. METERS OF NATIVE PLANTS PLANTED

**51,656**  
SQ. METERS OF NON-NATIVE PLANTS REMOVED

[http://sanctuaries.noaa.gov/education/ocean\\_guardian](http://sanctuaries.noaa.gov/education/ocean_guardian)

# NOAA Ocean Guardian School Recognition







Santa Cruz, CA

Project Pathway: Restoration  
2014-2019

Community Partner:  
Groundswell Coastal Ecology





 Presentations: Gault School  
Ecosystem Restoration 05/24/16





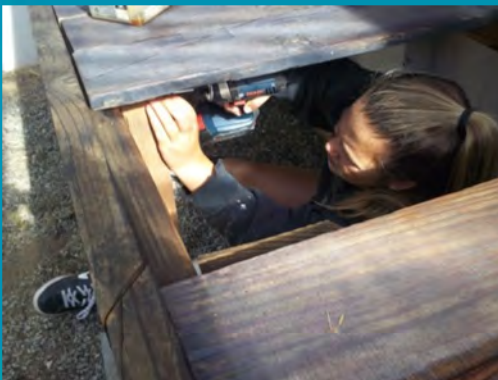




Correlitos, CA  
2016-2019

Project Pathway:  
Schoolyard habitat/garden

# Year 1: Raised Garden Boxes, Rainwater Collection System, Soil Bins, Garden Tables, and Orchard



# Year 2: Orchard Expansion and Native Demonstration Garden



# Year 3: Oak Woodland



# COAST LIVE OAK WOODLAND

## Why Oak Woodlands Matter:

Oak woodlands help clean water and build healthy soils. They offer ecological niches for an array of plants, animals, birds, and insects. They also clean the atmosphere of carbon and release oxygen.

Coast Live Oaks are adapted to dry summers and mild winters. They can live for 250 years or more. Much of the Central Coast was dominated by Coast Live Oaks before woodland removal began for agriculture and urbanization.

Oaks are highly resistant to fire and can even sprout new growth from a burned stump, trunk, or branch. Prior to colonial times, Native Americans managed oak trees with fire to control pests and invasive species and clear understory for gathering acorns. Acorn flour became a reliable food staple, enabling California tribes to establish the densest population of any nonagricultural people in the world.

## Planting the Oak Woodland:

The oak woodland project started with a lot of demolition in the form of ice plant removal. Students pulled and dug up almost 1,000 square feet of ice plant that filled three truck and trailer loads to be removed from the site. After preparing the ground, students planted twenty-two Coast Live Oaks from 95 containers. All trees were purchased from Rang Creek Native Nursery. Along with these larger oaks, students planted forty-five more Coast Live Oaks and forty-two California Buckeyes that were propagated and grown from seed here on campus. For the large oaks, students installed deer-proof cages around each tree to protect them from being destroyed by young bucks looking to rub their antlers. Almost twenty-five cubic yards of mulch were spread over the site and around the remote trees to prevent weed growth, retain soil moisture, and make sapling trees more visible. All irrigation to the newly planted trees and woodland is done by hand from rainwater harvested from the greenhouse roof.



Ice Plant Removal



Planting Oaks



Installing Deer-Proof Cages



Spreading Mulch



Oak Woodland From Above



Off Campus Restoration Projects:  
Year 1-Del Monte Beach  
Year 2-Quarry Park  
Year 3-Del Monte Beach





Watsonville, CA

Project Pathway: 6Rs  
2016-present



Boy or girl?

Choose

Are you taking a Spork packet today?

Choose

Why are you taking a Spork packet?

- Can't eat with hands.
- Messy with all the ketchup and sauce.
- Need a napkin
- Need a spork
- Need a straw
- I just like to
- Worried about germs
- Other:

Why do you think kids sneak snacks outside? Choose the three most important reasons. \*

- They don't want to eat inside at the brown table if they didn't finish.
- They like to eat it in their classroom.
- They are hungry during the day.
- They want to make a club or a party.
- They want to do trades for stuff kids bring from home.
- They want to eat their food in peace.
- They want to take it home.

How could we stop the snack wrapper trash? Choose the three best ideas. \*

- Have kids volunteer to tell kids not to eat snacks outside.

### The Great Calabasas Clean Up!

The Green Team is asking for your help in reducing the amount of litter on our campus. Please go out with your class as often as you can between April 19 and April 30. Use a timer to record how long you do the Wrapper Dash. Mr. Westfall has promised us that if we reduce the litter, he will move his office to the roof for one day! The class that picks up the most trash will win a prize. Mr. Westfall will do their homework while he is up there! Use the space below to tally each piece you pick up. If your class would like to create categories, you are welcome to do so! (The Green Team likes to sort the trash by "Home" and "School" trash, but you could do plastic/paper/other, or shiny wrappers/other trash, or just count all the pieces you find!)

Please count every piece of litter, no matter how small, but do not count natural objects such as sticks, wood chips, grass, dirt, rocks.

**Green Guardian School**

Date	Teacher's name	Number of students	Time spent dashing
7/13/19	Mrs. Jensen	22	10min

Tally Spots: 100, 200, 300, 400, 500

Total Pieces Today: 497

11 97



# We are the Calabasas Green Team

- We worked with PVUSD to replace spork packets with a dispenser.
- We gave everyone a reusable water bottle, using our Ocean Guardians grant
- Last year we did research on why kids snuck out snack wrappers, and this year we are researching the effect of plastic on the ocean and soil.
- We are going to the Algalita Youth POPS Summit for the first time, as well as the Monterey Bay Aquarium Ocean Plastic Pollution Summit for the fourth time.
- We made a worm bin for composting scraps from our cafeteria and fruit snacks.





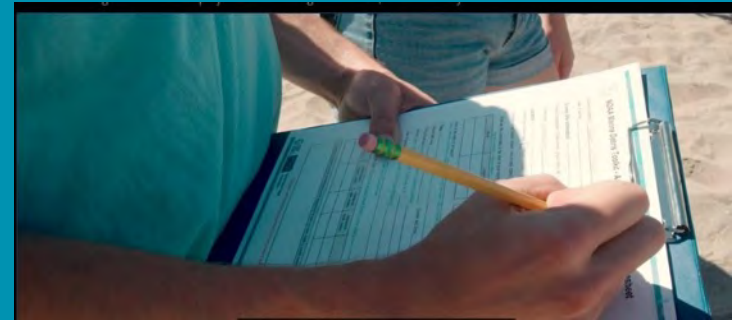
Scotts Valley High School  
2018-present

Project Pathway:  
School habitat/garden

Spring 2017

# Marine Debris Ocean Stewardship Program: an International Pilot Project

Funded by Scotts Valley Rotary Sustainability Committee  
in partnership with NOAA and the Tampa Bay Community Foundation





**Roof Formula (for each inch of rain)**

Square feet of roof x (.62 gallons per sq. ft.) = # gallons per one inch of rain.


- Square footage for Wrestling room (both sides of roof) = length (50ft) x width (23ft) = 1150 sq. ft.
- 1,150 ft x (.62) = 713 gallons
- Number of inches of rain necessary to fill both 1000 gallon tanks = 2000 gallons/713 = 2.80 inches of rain

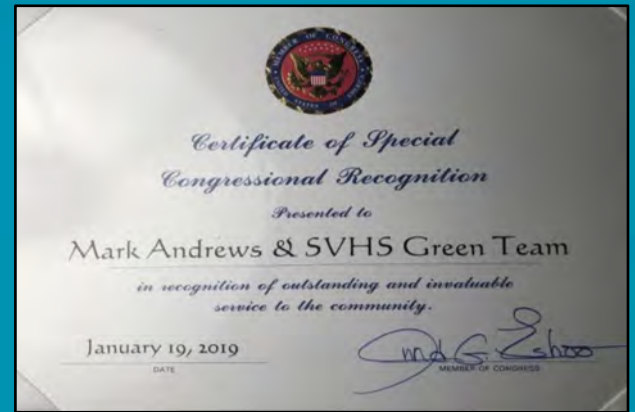



**Rainwater Harvesting-  
Slow it! Sink it! Spread it! Free Water!**

**Active Rainwater Harvesting:** Containment of FREE rooftop rainwater from winter storms in tanks for use throughout the summer dry season.

**Passive Rainwater Harvesting:** "Planting" rainwater runoff into the landscape and NOT routing it through storm drains, maximizing groundwater recharge and minimizing the use of costly municipal water for landscaping.







Scotts Valley High School

**GREEN TEAM**

ORGANIC WEED KILLER

*Student approved!*

Ingredients: 5 ml Dawn Dish Soap, 450 ml Distilled White Vinegar, 450 ml Water

Labels: "Natural Chemical All Organic", "Environmentally Friendly"



# QUESTIONS?

