



SCHOOL RESOURCE JOURNAL

A JOURNAL ON RESOURCE CONSERVATION TOPICS FOR SAN MATEO COUNTY EDUCATORS

ISSUE NO. 19, 2018-2019



Dear Teachers and Administrators,

We deeply appreciate the seeds of knowledge you plant every year! The students in San Mateo County are leading environmental change because of YOU, our amazing educators. Over the past 10 years, your passion and dedication have led many of you to partner with us on schoolwide and classroom waste reduction projects. Thanks

to your new and continued partnerships with us, in the last year alone we reached over 7,000 students and educators across San Mateo County.

The County of San Mateo Office of Sustainability (OOS) Schools Program offers a variety of free services, resources, and assistance to educators who are “greening” their schools, classrooms, and curricula. Some of our favorite education activities include leading worm and backyard composting demonstrations, setting up creative reuse projects, playing the 4R’s Unit Board games, and helping green teams set up recycling and composting programs at their schools. We also help teachers and schools create waste reduction action plans that can lead to Green Star School (www.greenstarschools.org) certification.

The mission of the Schools Program is to assist educators in inspiring students to take action to conserve resources and protect our environment. To that end, in addition to the resources and activities we provide, the Schools Program publishes an up-to-date collection of local environmental education providers through this annual journal. These providers also offer teacher-youth training workshops, field trips, classroom lessons and projects, and school assemblies.

To find links to environmental education literature, curricula, and grant opportunities for your classroom, school, and community, check our webpage at

www.smcsustainability.org/waste-reduction/education-schools. If you have any

questions or suggestions about the Schools Program, please don’t hesitate to reach out to us. We are looking forward to working with you throughout this school year.

Sincerely,
The OOS Schools Team



Office of Sustainability 4R’s Assembly Presentation



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OFFICE OF SUSTAINABILITY IS HERE TO HELP

County of San Mateo Office of Sustainability Schools Program can provide free resources, assistance, presentations and trainings.

Contact us at:
650-599-1424
sustainability@smcgov.org



OPPORTUNITY AWAITS Green Star School: Certify Your Classroom



Through the Green Star Schools (GSS) Certification Program, teachers are provided the tools, resources, and technical aid to inspire students to take action. Students examine, assess and explore how their classroom or school can model sustainable practices, such as minimizing the school's waste stream. This inquiry-based program is centered on a model of student-driven action and correlates with both NGSS and common core standards. The students will be given access to resources and information based on what they identify as problems in the initial assessment. Next, students will be asked to look deeper and work together to problem solve and recommend changes that are needed to implement best practices. This certification makes it easy for teachers to integrate environmental project-based learning (PBL) lessons into their curriculum with a multi-disciplinary approach. Each lesson counts as actions toward a GSS certificate. The GSS interactive website provides tools for teachers and students to calculate the carbon dioxide (CO₂) emissions reduction that results from implementing classroom and school-wide conservation projects. Starting this year, GSS is also providing opportunities for entire schools to earn a GSS certificate in the waste pathway by working with teachers and administrators to develop and implement an action plan. For more information about this exciting certificate program, please email us at sustainability@smcgov.org or go to www.greenstarschools.org.



Example Certificate



LEGISLATION

Plastic pollution has become a major waste problem and many State legislators have taken notice. They are working hard to make a difference by passing legislation that prevents plastic litter, conserves resources, and protects our environment. Below you will find a summary of recently approved legislation and how each bill aligns with student-led campaigns.

- **AB 1884 (Calderon, Bloom)** requires restaurants to offer plastic straws only upon request. This law supports the "refuse the plastic straw" campaign by promoting the use of compostable paper straws and/or reusable glass or metal straws. Through this campaign students can talk to restaurants and have them make a commitment to not offer plastic straws. To learn more how to implement a "refuse to use a plastic straw" campaign at your school check out <https://www.plasticpollutioncoalition.org/no-straw-please/>.
- **SB 1263 (Portantino)** directs the Ocean Protection Council to develop a plan for stemming the growth of microplastics. This law supports a campaign to reduce microplastic waste from being released into our water ways. This campaign promotes the washing of fleece clothing less frequently and when washing using cold water, liquid soap, and even possibly a **GuppyFriend™** washing bag. To learn more about microplastics and their effect on the environment visit: <https://oceanservice.noaa.gov/facts/microplastics.html>.

- **SB 1422 (Portantino)**

requires all drinking water to be tested for plastic contamination. This law supports a reduce water bottle waste campaign that promotes access to clean water through water bottle filling stations. This is an issue that students can easily apply to their day to day lives in schools and request schools and districts to seek funding for water bottle filling stations. Many schools in San Mateo County are implementing water bottle filling stations and to learn more about these programs contact us at sustainability@smcgov.org.



Say Yes to Reusables!

Do you have youth leaders that need support building their plastic pollution prevention campaign? The OOS Schools Program team directly supports student-led projects and classroom action plans, through which students can earn County-wide recognition and Green Star School certification for their classroom. The Schools Program also provides consultation for district-wide composting and recycling readiness.



Recycling at School

Computers and Electronics

Goodwill and St. Vincent de Paul donation sites in San Mateo County accept working computer equipment for reuse, and Crown Computer Recycling and Green Citizen accept non-working computers and electronics for recycling, free of charge. To find donations sites throughout San Mateo County use the recycling search engine at www.recyclestuff.org or call us at 1-888-442-2666.

Desks and Chairs

Is your school or district accumulating broken desks and chairs? If so, don't throw them away! Sims Metal in Redwood City will take them and recycle the reusable metals from them. Call Sims Metal at (650) 369-4161.

Batteries and Fluorescent Lights

It is illegal to dispose of these items in your trash. For information on how to properly get rid of these items, call (650) 372-6200 or www.flowstobay.org/toxic.

Lost and Found Items

At the end of the semester most schools accumulate a large amount of lost and found items such as clothing, lunch bags, toys, and books that are never claimed. These items can be donated to benefit a local charity. To find a list of charities in San Mateo County, use the recycling search engine at www.recyclestuff.org. If you have trouble finding a charity near you can also call us at 1-888-442-2666.

Books

Visit www.recyclestuff.org and use the recycling search engine to find locations in San Mateo County where you can donate books in good condition. Damaged or outdated softcover books can be recycled at your school site in your mixed paper recycling bins.

Free Technical Assistance

Schools Program staff can give your school or staff free technical assistance to implement or expand your school recycling and/or composting program. Contact us at sustainability@smcgov.org to get started.



Student Sorting Lunch Waste at Laurel Elementary

Reuse Centers

There are several organizations in the area that collect a wide variety of manufacturing byproducts, overruns and other scrap materials, and then redistribute them to schools and community groups for reuse. Many of these materials are great for science and art projects! Visit the following local reuse centers:

- Resource Area for Teaching (RAFT), Redwood City; (650) 802-5505, www.raft.net.
- Scroungers Center for Reusable Art Parts (SCRAP), San Francisco; (415) 647-1746, www.scrap-sf.org.

Surplus Property Sales

The public can purchase leftover office furniture, computers and office equipment from the County of San Mateo. Teachers can receive these items free of charge. Visit www.smcsustainability.org/waste-reduction/reduce-reuse-recycle/#surplusproperty to view the items available for purchase in-person and through the online auction.

Find a Recycler for... (e.g. Aluminum, computer, electronics)

6 results are found

7 results are found [Edit items in cart](#)

Find this search tool at www.recyclestuff.org



From Sorting to Saving Resources at John Muir Elementary School, San Bruno

John Muir Elementary School is a great example of how schools can help care for the environment by thinking mindfully about how they dispose their waste on campus. Under the leadership of Principal Fran Dunleavy, they have successfully implemented a 3-bin system for recycling, organics, and garbage during lunch! The secret to a successful sorting system is by establishing a green team made up of enthusiastic students ready to monitor, inform, and model sustainable sorting behavior! Students on the organics team work to make sure that food and food soiled paper goes into their green bins, and they are monitoring lunch periods to ensure that waste is sorted correctly. In the first year of this system, they were able to divert a large amount of waste from entering the landfill. By implementing recycling and organics services the school saves approximately \$2,085 annually. If you would like to learn more about implementing these changes to improve your school's waste reduction system, please contact us at sustainability@smcgov.org.



The 3-Bin System During Lunch

The Thought-Provoking Tiny Trash Bin at South Hillsborough School

Once the dust and the nerves have settled, the beginning of the school year is an ideal time to talk about the 4R's and set waste reduction goals with your students. Aisling Harvey, a 3rd grade teacher at South Hillsborough School, has done just that and taken the opportunity to introduce her incoming class to the Tiny Trash Bin. It measures about 6x8x2 inches—about 1/8th the size of the school's typical classroom trash bin.



The Tiny Trash Bin

When Mrs. Harvey introduced this year's classroom waste reduction challenge, some of the kids reacted with a bit of skepticism. One student asked why their class had to be different to which Ms. Harvey responded, "It's ok to be trend setters!" Setting an ambitious waste reduction goal has begun to change students' thought patterns and behavior. Some students have said that the Tiny Trash Bin makes them think twice before throwing an item away. Items thrown into the Tiny Trash Bin are being collected for a future waste audit lesson.

Kudos to Mrs. Harvey for her creativity and initiative. Waste reduction is as much if not more about behavioral change, and Mrs. Harvey's Tiny Trash Bin creates just the right amount of challenge for students to re-think their role in the process.

To learn more about starting your own waste reduction lesson or campaign in your classroom or school, please contact sustainability@smcgov.org.

"We may all have come on different ships, but we're on the same boat now."

— MLK Jr.



Writing Rubbish with the Peninsula Young Writers

There are so many ways youth can communicate to others about taking action and protecting our environment. The Peninsula Young Writers (PYW) worked with students from Taft Community School in Redwood City to creatively express their 4R's experience thanks to funding from the OOS 4R's grant program.

During a week-long summer camp the writers followed a curriculum called Writing Rubbish. They learned about “rubbish” with a 4R's twist and conducted a Literary Salon at the end of camp to showcase to their parents what they learned. The campers drafted stories with ecological themes, described experiences from exploring the Shoreway Environmental Center and experimented with various forms of poetry. As they explored the concept of “trash,” the young writers used scraps from newspapers to piece together “odorous odes.” Below are a few of the carefully crafted final pieces.



*Peninsula Young Writers
Crafting Their Poetry Pieces*

Ode to the Trash Pile

Like you hadn't showered in decades,
Full of the unplaceables,
Goey, moldy, oozy,
So exciting to my lunch
It wanted to escape.
Oh trash pile!
Enormous mountain,
Takes what we don't need
Buried under the earth.

— By Evelyn, Emma, Henry,
Jack and Jesse

To learn more about the Peninsula Young Writers visit www.peninsulayoungwriters.org or to learn more about funding similar projects with an OOS 4R's Grant go to <https://www.smcsustainability.org/waste-reduction/reduce-reuse-recycle/>.

What Does Pie Have to Do with Sea Level Rise and Youth?



*Youth Interns at Pie Ranch Play
the Game of Floods with OOS Staff*

Over the summer, the Youth Exploring Sea Level Rise Science (YESS) program brought answers to student interns, dubbed “home slices”, at Pie Ranch in Pescadero. The ranch, which happens to be the shape of a slice of pie, welcomes student interns every summer to empower them with technical farming skills to cultivate a healthy and just food system. Pie Ranch is based on the idea that Pie, with all its ingredients and associations, is a great means for understanding how food comes from the land to our tables.

The home slices participated in the Game of Floods activity guided by staff from the Office of Sustainability. This game provided students with insight into the decision-making process for protecting farm land and communities from flooding and sea level rise. Roles that students were assigned included community planners, ecologists, community members, and elected officials. This allowed students to grapple with the social, environmental, and economic challenges these stakeholders face when determining how to approach planning for sea level rise.

YESS Program Coordinator, Jackie Nunez, was “excited to leverage this community partnership with Pie Ranch that empowered students to draw connections between two important topics in southern San Mateo County—agriculture and sea level rise.” She shares, “Every time I facilitate the Game of Floods with students, they bring their interests and expertise to the game board. With Pie Ranch, students explored food justice, toggled between local and global impacts, and brainstormed innovative solutions to protect our at-risk communities.”

The Game of Floods is perfect for any high school classroom. If you are interested in having this game facilitated in your classroom along with accompanying sea level rise field trips, please contact at sustainability@smcgov.org. If you like to learn more about Pie Ranch visit <https://www.pieranch.org/food-education/>.



CURRICULA AND RESOURCES



TEACHER EDUCATION

SMCOE STEAM Center

The San Mateo County Office of Education (SMCOE) STEAM team envisions a world filled with empathic learners who are passionate problem-solvers, real-world risk-takers, and curious creatives. All children deserve access to learning that nurtures their innate curiosity! That is why the STEAM team collaborates with educators to design and facilitate learner-centered experiences that are also STEAMCENTRIC!

The STEAM team builds educator capacity through diverse professional learning opportunities, by connecting schools, networks, community, industry, and government, and by catalyzing and propagating emerging models for learning.

Visit the Center to attend active workshops on topics such as Argumentation & the Next Generation Science Standards, Number Talks and Conceptual Understanding, Project Based Learning (PBL), Making, Robotics, and Computer Science. To learn more about the STEAM Center or to check out their on-line resource center, go to:

www.smcoe.org/learning-and-leadership/stem-center.



LOCAL PROGRAMS AND RESOURCES

OFFICE OF SUSTAINABILITY

FREE PROGRAMS

Climate Change and Sea Level Rise

The Youth Exploring Sea Level Rise Science (YESS) project empowers youth to directly engage in climate change solutions in their own communities. Through an experiential education program that incorporates cutting-edge classroom curricula with hands-on science, high school students explore why sea level rise is happening and how their lives will be impacted. They collect their own data, create communications products, and contribute meaningfully to local science and policy decisions. YESS allows those who will be most impacted by climate change— young people—to have a voice on the issue and to spark a broader conversation about risk and resiliency. The program is divided into three primary components:

- 1. Classroom Learning:** Through a flexible curriculum that includes hands-on experiments, games, and interactive activities, students learn about the causes and potential impacts of sea level rise.
- 2. Field Trips:** Students analyze local sea level rise data, explore flood risk and potential solutions for their communities.
- 3. Final Projects:** Students reflect on what they've learned and what sea level rise will mean for their communities, and construct final projects based on their own interests. Final projects include presentations to local sea level rise stakeholders, multi-media communication projects, and more.

The YESS curriculum, aligned with Next Generation Science Standards (NGSS) and Common Core Standards, is now available to high school teachers throughout San Mateo County for the 2018-2019 school year. If you would like more information, or to partake in the YESS program, please contact us at sustainability@smcgov.org.

Food Share Table Program

The Food Share Table Program is a statewide initiative to help feed students who may not be able to afford a well-balanced lunch and reduce the amount of food that ends up in landfills. Share tables provide a way for schools to be part of the solution to save food and protect the environment by sharing cafeteria food during lunch. The Office of Sustainability in partnership with Environmental Health Services offers technical assistance and a toolkit to help implement safe food share tables at schools. For more information visit smchealth.org/sharetable.



Food Share Table



4R's Unit Games (grades, 3rd-12th)

Teach your students about the 4R's by using our interactive board games. We will have a limited number of classroom sets of the 4R's Unit Games that we will be distributing to schools for free. Our staff will help teachers facilitate these games in the classroom, in the hopes that they will teach other teachers. We will be providing classroom sets of these games to schools on a first come first serve basis. Additionally, teachers can check out these games from the Office of Sustainability. If you are interested, please email sustainability@smcgov.org.



Composting Lessons and Demonstrations (all grades, TK-12th)

Composting is a great way for students to experience hands-on learning in nature while simultaneously recycling organic waste. Office of Sustainability offers free classroom demonstrations correlated to the Next Generation Science Standards on outdoor composting and "vermicomposting" (worm composting). To schedule a demonstration contact us at 1-888-442-2666 or sustainability@smcgov.org.

4R's Presentations (all grades, TK-12th)

Schools Program staff is available to give free presentations to classes, small groups, school assemblies or events to support your school's recycling, composting, waste reduction, and green building efforts. Contact us at 1-888-442-2666 or sustainability@smcgov.org for more information.

Community and School Garden Partnership

The Office of Sustainability (OOS) is currently looking to partner with local schools and community organizations to build and maintain vibrant community gardens in San Mateo County. Through this program, community members will practice sustainable composting techniques and apply their hands-on experience at home to reduce the amount of organic waste being sent to landfills. Participants will also learn to use compost as a soil amendment to grow nutritious and fresh produce!

The OOS will provide funding and resources to help start gardens and maintain current gardens. The funding recipient's role is to use the funding to build the garden, coordinate with the gardeners to upkeep the garden, and promote composting and sustainable gardening in the community. Please contact sustainability@smcgov.org if your organization or school is interested in starting a community garden or helping to maintain one! Current community garden partners include:

- **Woodrow Wilson School in Daly City**
- **Phil's Garden at the Serramonte Therapeutic Day School in Daly City**
- **Barrett Community Center in Belmont**



TEACHER EDUCATION

The County of San Mateo's Sustainability Academy

The Sustainability Academy is excited to launch a new program for the 2018-2019 year! The Academy offers educational courses about sustainability at no-cost for teachers, residents, students (age 14 or older) and businesses in San Mateo County. To learn more about the Academy and its offerings, please visit www.smcsustainability.org/climate-change/sustainability-academy or email us at sustainability@smcgov.org

Bay Area Earth Science Institute (BAESI)

BAESI offers hands-on teacher-training workshops and field trips. By attending these activities, 4th-12th grade teachers will be provided with instructional materials for classroom lessons, and they have the opportunity to earn continuing education units (CEU's) through San Jose State University. For more information, visit www.baesi.org.



Community Garden



CURRICULA AND RESOURCES



TEACHER EDUCATION

Workshops at RAFT

Attend workshops at Resource Area For Teachers (RAFT) and earn continuing education units (CEUs) from San Jose State University. In addition to affordable craft supplies, RAFT offers numerous interactive workshops during the school year in Redwood City and San Jose. Through these workshops, teachers learn hands-on activities for a variety of subjects. Visit RAFT at www.raftbayarea.org/workshops.

Education and Training at the Energy Coalition

The Energy Coalition's PEAK program gives educators opportunities for high-quality STEM professional development to further hands-on, science-of-energy education in their classrooms and after-school sites. The PEAK program provides schools with avenues to save energy and water on campus through student-led actions. They help advance critical thinking, problem-solving, and team building skills to inspire students to engineer innovative solutions for a brighter future for all of us.

During the professional development training, educators will receive lessons aligned with NGSS and Common Core Standards, a toolkit of materials, ongoing support from staff, and access to green career connections through My Energy Future at no cost. Admission to online and in-person training workshops is offered on a rolling basis.

For more details about their offerings, please visit www.peakstudents.org/teachers-corner/ or email Rachael Van Schoik at rvanschoik@energycoalition.org.

California Regional Environmental Education Community (CREEC) Network

Learn about what's happening with environmental education in the Bay Area and throughout California by checking out the California Regional Environmental Education Community (CREEC) Network at www.creec.org. CREEC Regions provides professional learning opportunities and resources to educators, as well as foster communications among schools and organizations that support environmental literacy.

LOCAL PROGRAMS AND RESOURCES

ENERGY AND WATER



Energy and Water Upgrade Toolkit at Your Local Library

The Office of Sustainability's Check It Out! Home Energy and Water Saving Toolkit is available for checkout at your local library. Designed to help residents evaluate the energy and water usage of their homes, this kit can be easily adapted for classroom lessons. With the kit's free LED lightbulb, heat leakage thermometer, faucet aerators, simple instructions, and other resources, students can learn how to enhance their classroom's and even home's water and energy efficiency. To learn more about these kits email us at sustainability@smcgov.org.

Flows to Bay



The "Teachers" section of the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) website provides teachers with resources to educate students about water and how we can prevent pollution of our local waterways. For more information, visit www.flowstobay.org/schools.

Making a Solar Oven

Explore the world of solar energy and how you can harness it to make heat and electricity. The Office of Sustainability has a solar oven available for teachers to borrow for free. The oven is accompanied by instructions for a hands-on activity where students create their own solar ovens out of pizza boxes and use them to make nachos. This activity is available for download on our website, www.smcsustainability.org/waste-reduction/education-schools.

"When educating the minds of our youth, we must not forget to educate their hearts."

— Dalai Lama



COMMUNITY SERVICE

Fun Ways for Students to Fulfill Their Community Service Hours

If your class or school requires community service hours, or you have students who want to help their community, have them check out the County of San Mateo's Sustainability Academy. Students age 14 and older can participate in Academy courses at no-cost. In exchange for enrollment, students will be required to volunteer their time back to their community. We encourage students to volunteer in an activity that is fulfilling and fun for them, and will help connect them to volunteer opportunities and resources that meet their needs. To learn more about the Academy and its offerings, please visit www.smcsustainability.org/climate-change/sustainability-academy or email us at sustainability@smcgov.org.



TRANSPORTATION

Safe Routes to School

The San Mateo County Office of Education has joined other counties throughout California and the nation with the implementation of its very own countywide Safe Routes to School Program (SRTS). This program sets the ground work for school-wide projects and activities to encourage and enable students to walk and bike to school. The overall goal is to reduce traffic congestion and emissions caused by school-related travels, and at the same time improve students' health, well-being, and safety. To learn more about San Mateo County SRTS resources for implementing school-wide projects and activities, and for upcoming events, visit tinyurl.com/SMCSRTS/.



HEALTH AND WELLBEING

Get Healthy San Mateo County (SMC) - Healthy Schools Program

Get Healthy SMC currently hosts the San Mateo County Youth Commission and has partnered with Community Alliance with Family Farmers (CAFF) to increase the amount of local produce in school meals. To learn about this program and to discover other resources that the County Health System has for teachers, administrators, parents, and guardians, visit www.gethealthysmc.org/healthy-schools. Informational resources on this website include links to school wellness policies, educational attainment, parent advocacy, nutrition, and afterschool and child care programs. You will also be able to see updates about the local School Wellness Alliance program and learn how you can join this inspirational group.



TEACHER EDUCATION

San Mateo Environmental Learning Collaborative and Zero Waste Teacher Fellowship

The Office of Sustainability is thankful to have participated in and supported two teacher professional development programs hosted by the San Mateo County Office of Education (SMCOE): San Mateo County Zero Waste Teacher Fellowship and San Mateo Environmental Learning Collaborative (SMELC). The overall objective for both programs is to provide teachers with a professional learning program that supports them in deepening their knowledge and understanding of environmental issues and developing their own project based learning (PBL) units. These units help students dive deep into local and global environmental problems, and culminate with students generating and implementing action and advocacy based solutions to these problems. The SMELC institute also gave teachers the opportunity to interact and connect with representatives from various local environmental education organizations who can provide resources to support their lessons. To learn more, visit tinyurl.com/SMCOE-EnvPD/.



Teacher Training Workshop at SMELC



CURRICULA AND RESOURCES

LOCAL PROGRAMS AND RESOURCES

ADDITIONAL ENVIRONMENTAL EDUCATION

Kids Make a Connection (5th-7th grades)

Help students make a connection between natural resources and their daily consumption and disposal habits by visiting the Office of Sustainability Schools Program Kids web page: www.smcsustainability.org/kids.

California's Education and the Environment Initiative (EEI) Curriculum

The EEI Curriculum is a K-12 environmental-based curriculum, and each unit correlates with the Next Generation Science Standards and the Common Core Standards. To download the curriculum, visit www.californiaeei.org/curriculum/.

KQED Learn: Inspire Students to Investigate

KQED Learn is a free, safe, online space where middle and high school students build essential skills in research, collaboration, data analysis and communication. It inspires students to research, reflect and respond to timely topics such as environmental topics, developing the skills they need to be successful communicators in today's world. To learn more visit, ww2.kqed.org/education/.

STEM Fair and Arts Expo

This year, the San Mateo County Office of Education's STEM Fair and Arts Expo will be held at the San Mateo County Event Center—Fiesta Hall from March 2–3, 2019. For information about submitting a project proposal, visit www.stemfair.net and/or contact Doron Markus at dmarkus@smcoe.org. For science fair project ideas, search 'science fair projects' at www.usa.gov/education or visit www.sciencebuddies.com.

Closing the Loop

The California Department of Resources Recycling and Recovery (CalRecycle) created "Closing the Loop," an interdisciplinary K-6 curriculum emphasizing waste prevention, recycling and composting through hands-on activities. Download lessons at ww2.calrecycle.ca.gov/Publications/Details/796.

VIDEO CLIPS

Video clips are a fantastic way to introduce sustainability and other environmental topics to students in the classroom. You can find some great video clips on the following websites:

Green Ninja Show:

www.greenninja.org/Green_Ninja_Show

National Geographic:

www.nationalgeographic.com/search/?q=videos

National Science Foundation (NSF) Science 360Videos:

science360.gov/topic/Earth+&+Environment

BBC Nature:

www.bbc.co.uk/nature/extinction_causes/Geologic_temperature_record

Sustainability Hub:

sustainabilityhub.com



TEACHER EDUCATION



4R's Board Game

OFFICE OF SUSTAINABILITY FREE PROGRAMS

Don't forget to visit the Office of Sustainability Schools Program Website and download our Resource Lists at www.smcsustainability.org/waste-reduction/education-schools or call us at 650-599-1424 to find additional information on developing classroom activities and curricula.

FREE PRESENTATIONS FOR CLASSES (All grades)

Schools Program staff is available to give free presentations to classes, small groups, school assemblies or events to support your school's recycling, composting, waste reduction, and green building efforts. Contact us at 650-599-1424 or sustainability@smcgov.org for more information.



OOS Educator Leading a 4R's Assembly



LOCAL PROGRAMS AND RESOURCES

Classroom Visits and Field Trips

There are many environmental education organizations within or near San Mateo County that offer field trips or bring their interactive programs directly to schools.

San Mateo County Parks

Discover the different habitats in our parks and learn about all of the species that exist there. To learn more about our County Parks and how to schedule a possible docent led tour at some of them visit <http://parks.smcgov.org>.

Marine Science Institute in Redwood City

Encounter the creatures that live in San Francisco Bay and practice using the equipment and tools researchers use to study them: www.sfbaymsi.org.

WILDMIND in Half Moon Bay

Non-releasable and injured wildlife become the ambassadors that teach students about the importance of protecting and conserving our natural environment: <https://www.wildmindscience.org>.

Elkus Ranch in Half Moon Bay

Meet the goats, chickens, horses, and sheep that live on this working farm and learn about environmental stewardship: <http://elkusranch.ucanr.edu>.

CuriOdyssey at Coyote Point

Experiment with physics and observe California native reptiles, amphibians, birds, and mammals in their habitats: <https://curiodyssey.org>.

Pie Ranch in Pescadero

Experience sustainable farming practices by making pie from scratch, starting with the very source of the ingredients such as milking goats and cows for butter: www.pieranch.org.

The San Mateo County School Farm Operated by the HEAL Project (Half Moon Bay)

Field trips to this farm offer San Mateo County students an opportunity to connect with the environment and the food they eat: www.thehealproject.org/farm.



FREE OOS 4R's Field Trip: Students Walk the Bay Trail in SSF

Hidden Villa in Los Altos Hills

Practice sustainable agriculture and animal husbandry and take hikes to explore the wilderness that surrounds this farm: www.hiddenvilla.org.

Environmental Volunteers in Palo Alto

Visit the EcoCenter, explore the marsh of San Francisco Bay, and learn about the Bay's natural systems: www.evols.org.

Shoreway Environmental Center in San Carlos

RethinkWaste (South Bay Bayside Waste Management Authority-SBWMA) offers free field trips for classes 3rd grade and up. Free bus transportation is available for 3rd to 5th grade classes in the RethinkWaste service area (Atherton, Belmont, Burlingame, East Palo Alto, Foster City, Hillsborough, Menlo Park, Redwood City, San Carlos, San Mateo, Unincorporated San Mateo County, and West Bay Sanitary District). Also, schools and community groups in the RethinkWaste service area can participate in contests, community events, and they can receive up to five 50-lb bags or 20-cubic yards of compost for a garden project. To learn more visit their website at www.rethinkwaste.org and to schedule a tour, email tours@rethinkwaste.org.



Students Observing How Recyclables are Processed

4R'S (REDUCE, REUSE, RECYCLE, ROT-COMPOST) GRANTS

Are you looking for funds to cover the cost of field trips, workshops, or classroom materials to provide your students with environmental project based learning (PBL) experiences? If so, the Office of Sustainability (OOS) may be able to help. OOS is offering our 4R's Grants to public agencies, nonprofit organizations, educational institutions and other qualified parties. These grants support small projects that will increase awareness and action about the 4R's (reduce, reuse, recycle, rot-compost). Our past grants, through the RecycleWorks Program, have funded school recycling and compost bins, environmental field trips, recycling campaigns, and school garden structures such as a greenhouse and planter boxes made from salvaged lumber. Call for applications will open on Monday, January 7th, 2019 and will close on Monday, February 4th, 2019. For more information contact us at sustainability@smcgov.org.



SIGNAGE

Take Advantage of Our Free Signage

One way we can get students and school staff to reduce waste is by communicating with them on ways to take action and reminding them specifically what goes into the recycling, organics, and garbage bins on campus. We can do this through signage. For example, a green team or even leadership class can take ownership of their program and create their own posters and signs and/or they can use some of our signage.

Check out some of the following posters, signs, and stickers that we offer. If you would like some of this signage for your classroom or school please email us at sustainability@smcgov.org.

BE A LUNCH TIME HERO! PACK A WASTE-FREE LUNCH

LET'S GET PACKIN'!

Americans produce up to 1/2 pound of lunch waste each day, enough to fill four garbage cans a year. Help reduce waste by packing your lunch. **THE POWER IS IN YOUR HANDS!**

3 SIMPLE STEPS TO A WASTE-FREE LUNCH:

- 1 Use a lunch box or reusable sack.
- 2 Include a cloth napkin and reusable silverware.
- 3 Make use of reusable food and drink containers.

BY PACKING A WASTE-FREE LUNCH YOU CAN:

- Save up to \$300 a year.
- Save natural resources by reducing your packaging.
- Prepare a more nutritious lunch.

OFFICE OF SUSTAINABILITY
COUNTY OF SAN MATEO

888-442-2666
www.smc sustainability.org

Find more tips on packing waste-free lunches at:
www.smc sustainability.org/waste-reduction

¡SEA UN HÉROE DE LA HORA DE ALMUERZO! EMPAQUE UN ALMUERZO SIN DESECHOS

¡EMPAQUEMOS!

Los estadounidenses producen hasta 1/2 libra de desperdicios de almuerzos cada día, suficiente para llenar cuatro botes de basura al año. Ayude a reducir los desechos al empaquetar su almuerzo. **¡EL PODER ESTÁ EN SUS MANOS!**

3 PASOS SIMPLES PARA UN ALMUERZO SIN DESECHOS:

- 1 Use una lonchera o bolsa reutilizable.
- 2 Incluya una servilleta de tela y cubiertos reutilizables.
- 3 Use recipientes de comida y bebida reutilizables.

AL EMPACAR UN ALMUERZO SIN DESECHOS USTED PUEDE:

- Ahorrar hasta \$300 al año.
- Ahorrar recursos naturales al reducir los materiales de embalaje.
- Preparar un almuerzo más nutritivo.

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COUNTY OF SAN MATEO

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www.smc sustainability.org

Para obtener más consejos sobre cómo empaquetar almuerzos sin desechos vaya a:
www.smc sustainability.org/waste-reduction

11" by 14" No Waste Lunch Posters in English and Spanish (also available as refrigerator magnets)

MAKE YOUR OWN COMPOST!

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COUNTY OF SAN MATEO

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www.smc sustainability.org

1 CHOOSE A METHOD AND A LOCATION

Choose a location in the sun or shade!

2 BUILD A PILE

Build a pile of 60% "browns" to 40% "greens" in alternating layers. Chop larger materials into smaller pieces.

BROWNS (CARBON)
Dried plant material
Paper towels, napkins, and plates
Newspaper
Wood ash
Untreated sawdust

WATER
Add water as you build the pile. Keep as moist as a wrung-out sponge.

GREENS (NITROGEN)
Grass clippings
Coffee grounds
Vegetables
Herbicide measure
Fruit
Greens

3 PILE MAINTENANCE

The pile needs oxygen. Turn the material from the outer edges to the center where it will be the hottest.

Add water as needed so it is as wet as a wrung-out sponge.

Use a compost thermometer to check the temperature of the pile. When the center of the pile reaches 100° F, turn it. If you don't have a thermometer, turn the pile 2-4 days after you build it and occasionally thereafter.

4 COMPOST CRITTERS

Common critters that break down organic material:

- Millipede
- Centipede
- Ant
- Flea
- Mole
- Earthworm
- Fruit fly
- Slig
- Beetle
- Spider

5 TROUBLESHOOTING

Bad odor
Reason: Too much moisture
Solution: Turn the pile and add dry porous material.

Pile Will Not Heat Up
Reason: Pile is too dry and/or lacks "greens"
Solution: Add water and/or "greens" and turn the pile.

6 IS IT DONE?

Signs that your compost is done and ready for harvesting:

- Dark chocolate brown
- Clumpy feel
- Chunky smell
- Material fairly small

Separate any remaining large material such as large pieces of wood with a shovel.

USE IT AS

- Soil conditioner
- Top dressing
- Mulch
- Potting mixtures

DO NOT USE

- Diseased plants
- Weeds with seeds
- Dog or cat feces
- Meat, fish, poultry
- Dairy
- Treated wood
- Fats, oils, grease

MAKE COMPOST USING WORMS!

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888-442-2666
www.smc sustainability.org

1 CHOOSE A BIN

Purchase or build a bin. Key bin characteristics:

- 8-12 inches deep
- A lid to keep out flies and rodents and keep bin dark
- Drainage holes on bottom (1/4 inches or smaller)
- Tray/another bin layer to capture drainage

2 CHOOSE A LOCATION

Protect from direct rain, sun and excessive cold. Bin can be elevated outdoors or in sheltered outdoor area (e.g., shed, garage, balcony).

3 BUILD YOUR WORM HOME

WORMS
Start with one pound of red wigglers (purchased or taken from another bin).

FOOD

- Most fruits and vegetables
- Cereals and grains (e.g., oatmeal, cracked rice)
- Coffee filter paper, tea bags
- Bread, pasta, dried flowers
- Eggshells, sock snuff, crushed paper snuff
- Worms have no teeth, so feed them soft foods!

BEDDING
Holds moisture, discourages fruit flies, and is main medium for worms to live in.

- Options: shredded cardboard or newspaper, or coir (dried natural fiber)
- Inanimate first in water so it is damp like a wrung-out sponge

CARDBOARD
Prevents materials from falling through holes on bottom of bin.

BLANKET
Finish by adding a blanket (e.g., more bedding, a piece of burlap). It discourages fruit flies.

DO NOT USE

- Meat, poultry, fish
- Dairy
- Junk food (e.g., potato chips, candy bars)
- Citrus (e.g., orange, lemon, lime)

4 FEEDING TIPS

- Cut food into small pieces. Place food under bedding (but not buried in castings) in different part of the bin each time.
- Feed worms every day or twice or once a week. There is no strict schedule. Feed worms just ahead of their rate of consumption.

5 OTHER CRITTERS

Good: Springtails, roly polys, earwigs, pot worms, millipedes, mites (except earthworm mites)

Bad: Centipedes, fruit flies, earthworm mites, ants

"Good" critters do not hurt worms. There are different ways to handle "bad" critters, depending on what they are.

6 TROUBLESHOOTING

Fruit flies
Reason: Exposed food
Solution: Bury food in bedding. Add more bedding to cover food.

Worms are dying or trying to escape
Reason: Environment is too wet, too dry or bedding is used up
Solution: Add more bedding, moisten bedding, or harvest castings.

24" by 34" Outdoor School Garden Composting and Worm Composting Signs (also available in Spanish)



Recycling

Mixed Paper, Bottles, Cans and Food Containers

No polystyrene cups or containers
No food or food-soiled paper
No paper cups
No plastic packaging

*Ni vasos ni cajas de espuma de poliestireno
Nada de comida ni papel sucio de comida
No vasos de papel
Este embalaje no contiene material plástico*

OFFICE OF SUSTAINABILITY
COUNTY OF SAN MATEO

For more information on reducing waste visit us at sustainability.smcgov.org or call 1-888-442-2666.

October 2017 Partially funded by CalRecycle

Mixed Paper

No plastic, glass or metal
No Styrofoam cups or containers
No food or food-soiled paper
No paper/plastic cups

*Nada de plástico, vidrio o metal
Ni vasos ni cajas de espuma de poliestireno
Nada de comida ni papel sucio de comida
No vasos de papel ni de plástico*

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November 2018 Partially funded by CalRecycle

Compost

Food and Food-soiled Paper

No plastic, glass or metal
No styrofoam cups or containers
No liquids

*Nada de plástico, vidrio o metal
Ni vasos ni cajas de espuma de poliestireno
Ningún líquido*

OFFICE OF SUSTAINABILITY
COUNTY OF SAN MATEO

For more information on reducing waste visit us at sustainability.smcgov.org or call 1-888-442-2666.

November 2018

11" by 8.5" Stickers for Labelling Recycling and Organic Bins



FREE FIELD TRIP

FREE Office of Sustainability 4R's Field Trips to a Transfer Station and Recycling Center

Our Schools Program will once again be offering approximately 30 free field trips (including bus transportation) for classes of 25-35 students in 2nd to 12th grade. Participating students will tour a working transfer station and recycling center (materials recovery facility). On these tours, the students will see how garbage and recyclables are sorted and processed before being shipped out to a landfill or recycling facility. If time permits, students will also explore a local closed or open landfill to learn about its long-term environmental impacts.

These field trips align with the Next Generation Science Standards and are a great opportunity for students to gain firsthand knowledge about resource conservation. Classes are selected for these field trips by a

random drawing from a pool of submitted applications. If your class is selected for a field trip, we will assist you in developing pre- and post-tour activities to incorporate into your existing course units. You will also be required to attend a mandatory informal orientation workshop on February 28, 2019, from 4:15 p.m. to 6:15 p.m. to discuss field trip goals, as well as to schedule your class field trip date.

Field trips will be scheduled during the months of March, April, and May. To apply for a FREE FIELD TRIP, please fill out the application form below and mail or email to the Office of Sustainability Schools Program by Thursday, February 7, 2019.

COMPLETE AND RETURN THIS FORM TO THE OFFICE OF SUSTAINABILITY

WE MUST RECEIVE YOUR APPLICATION BY 5:00 P.M., FEBRUARY 7, 2019 TO BE ENTERED INTO A RANDOM DRAWING FOR THE FREE FIELD TRIP.

MAILING ADDRESS:

School Bus Trip, Office of Sustainability Schools Program
455 County Center, 4th Floor
Redwood City, CA 94063-1665

OR GO PAPERLESS:

Fill out this application, take a photo of it, and email it to sustainability@smcgov.org with the subject line, "4R's Field Trip.

Teachers will be notified by email approximately one week after the application deadline. Please provide an alternative address where we can send your notification letter if you do not have a school email address. ***If selected, you will be required to attend an informational workshop on February 28, 2019, from 4:15 p.m. to 6:15 p.m.*** in order to be awarded the trip and participate in the program.

School: _____ City: _____

Teacher: _____ Grade: _____

Phone: _____ Email: _____

School Address: _____

Alternate Mailing Address/City/Zip Code: _____

How many students will be attending the field trip? _____



MEET OUR OFFICE OF SUSTAINABILITY EDUCATORS!

We are all about boots on the ground, and helping students and teachers take action to make a difference!



Left to Right: Esme, Nicole, Montse, Gerald, Jackie, Megan

We are very excited about supporting our County's diverse students and communities to be a part of the collective efforts that ensure a healthy and prosperous environment and future for all. We love empowering the youth to take action because we believe every student has the potential to make a difference in this world. When it comes to being responsible environmental stewards, no act is too small because the small actions of many can make all the difference in the world. Our work will continue to build a community that embraces our youth's voices and supports their path in becoming the environmental leaders of today and tomorrow.

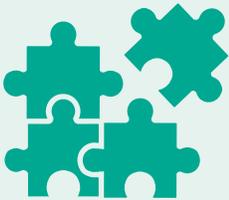


OFFICE OF
SUSTAINABILITY
COUNTY OF SAN MATEO



THANK YOU TO ALL OUR EDUCATORS!

You are making a difference in your students' lives.
May these quotes inspire you to continue planting the seeds of action!

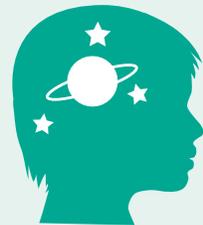


"I like to envision the whole world as a jigsaw puzzle... If you look at the whole picture, it is overwhelming and terrifying, but if your work on your little part of the jigsaw and know that people all over the world are working on their little bits, that's what will give you hope."

— Dr. Jane Goodall

"Every great dream begins with a dreamer. Always remember, you have within you the strength, the patience, and the passion to reach for the stars to change the world."

— Harriet Tubman



"I realized if you can change a classroom, you can change a community, and if you change enough communities you can change the world."

— Erin Gruwell