

Brought to you by
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Grapevine



July, 2022

***If you represent an organization and would like to write your own (short) description, that would be GREAT. If you offer opportunities for volunteering or citizen science, please be sure to note that.**

What is the Grapevine?

The *Grapevine* is a free monthly e-newsletter intended to help inform North Bay Area educators about science and environmental education resources, events, opportunities, etc. To receive the *Grapevine*, just send an email asking to be added to the *Grapevine* email list to: mroa@sonic.net

Please share this information with whomever might be interested, and if you find out about something that should be shared among science and environmental educators, please let me know.

If you would like to have your event or other science or environmental education opportunity included in the Grapevine, send me an email with a short announcement that I can cut and paste. Send to: mroa@sonic.net Submissions are usually due on the fifth of the month. I plan to send the Grapevine the around the tenth of each month. (See Submission Due Date below.)

To unsubscribe, just send me an e-mail asking to be dropped from the Grapevine list.

Submissions Due:

Submissions for the next *Grapevine* are due **August 5**. The next issue will include events approximately through Sunday **August 21**.

Sharing...resources, information, opportunities

Science Challenge...to end???

In the fall of 2007, I was hired as the part-time science specialist for the Sonoma County Office of Education. One of my responsibilities was to organize the SCOE Science Olympiad event, which I did until the position was eliminated in 2013. Participating teachers asked me to continue to organize a similar event, and I did so for several years, changing the name to the Science challenge.

We held an in-person Science Challenge in March of 2020, at the beginning of the COVID pandemic. We haven't had one since then, but most of the teachers who have been participating would like to offer a Science Challenge event to their students.

Since then, I have become the grandfather of two wonderful grandchildren, for whom my wife and I provide a lot of child care. I've also increased my volunteer work at Armstrong Redwoods. **I've decided that it time to pass the Science Challenge torch (baton? microscope?) to somebody else. If you or somebody that you know is interested, I'd be glad to help with the transition. I'm also happy to discuss the possibility with no obligation. The decision should be made by next October. Contact me at mroa@sonic.net.**

Stewards of the Coast and Redwoods:

Upcoming classes:

Guided Forest Immersion in the Redwoods-Armstrong Saturday, July 9, 2022

9:00 am - 11:00 am

Mindful Nature Walk with Expert Guides

[MORE INFO](#)

Guided Forest Immersion in the Redwoods-Pomo Canyon Saturday, July 16, 2022

9:00 am - 11:00 am

Mindful Nature Walk with Expert Guides

[MORE INFO](#)

Family Storytime at Armstrong Forest Theater Thursday, July 21, 2022

10:30 am - 11:30 am

Join our local librarian in singing, reading, and playing in the Redwoods!

[MORE INFO](#)

New Volunteer Orientation with Stewards! Saturday, July 23, 2022

10:00 am - 12:00 pm

Learn how to become a State Parks volunteer!

[MORE INFO](#)

Learn to Read Animal Tracks and Signs at Pomo Canyon (July 30) Saturday, July 30, 2022

9:00 am - 12:00 pm

A guided walk learning to read animal tracks & signs.

[MORE INFO](#)

[Learn to Read Animal Tracks and Signs at Pomo Canyon \(August 6\)](#) Saturday, August 6, 2022
9:00 am - 12:00 pm

A guided walk learning to read animal tracks & signs.

[MORE INFO](#)

[An Inside Look: What the Supreme Court's EPA Decision Means for Climate Action](#)

The Union of Concerned Scientists invites you to a virtual discussion on the recent Supreme Court decision limiting the EPA's ability to rein in climate emissions from power plants. Join our climate and energy experts to unpack the implications of the court's ruling and the path forward on climate action.

Date: Tuesday, July 12

Time: 7:00–8:00 p.m. ET / 4:00–5:00 p.m. PT

[Register for the virtual discussion today—and submit a question in advance.](#)

Speakers:

- Rachel Cleetus, PhD, Policy Director, UCS Climate & Energy Program
- Julie McNamara, Deputy Policy Director and Senior Energy Analyst, UCS Climate & Energy Program
- Johanna Chao Kreilick, UCS President (moderator)

Over the course of an hour, we will contextualize the Supreme Court's decision, discuss what it means for power plant emissions regulations, and lay out some of the broader implications. You will learn how UCS intends to continue to push for bold and necessary climate action, and how you can get involved with this advocacy work.

We will conclude the discussion with a 20-minute question-and-answer period. [Please be sure to register and submit your questions in advance.](#)

If you have any questions about the virtual discussion, please email us at events@ucsusa.org.

U.C. California Climate Steward Certification

Wednesday, August 17, 2022 - Wednesday, November 9, 2022 6:30 pm - 9:00 pm

Help your community find resilience in a changing climate.

[MORE INFO](#)

Wet Gazette: Summer 2022:

CALIFORNIA PROJECT WET GAZETTE–WATER & TRADITIONAL ECOLOGICAL KNOWLEDGE IN A CHANGING CLIMATE SUMMER GAZETTE SUGGESTS HOW TO WEAVE INDIGENOUS KNOWLEDGE INTO PROJECT WET ACTIVITIES

People have lived in the American Southwest for thousands of years, learning to live with extreme weather events that have brought down past civilizations. The [Summer Gazette](#) highlights examples of traditional ecological knowledge that Native American tribes are using to help conserve water, restore ecological processes and resiliency in a world that has grown far warmer, arid and extreme in its cycles. This latest Gazette suggests how to incorporate Indigenous knowledge into Project WET activities with your students. There are still registration slots open for a couple of Project WET summer events, including:

- [Understanding Climate Change in California](#) – July 28, Los Banos. Participants will learn how climate change is affecting California water resources, have an opportunity to talk with DWR Climate staff about current climate science and experience Project WET activities to engage students in the study of climate back in the classroom.
- [California Water Institute for Teachers](#) - August 3-5, Solano County. This comprehensive multi-day teacher training highlights the region’s complex water resources, offers first-hand experiential learning opportunities and provides teachers with the tools to support students in learning about local watersheds and their function.

Finally, keep up on the latest in drought news with our [All Things Drought](#) page and keep an eye out for new Project WET [workshops](#) and [special events](#) as we get closer to fall.

Children’s Museum of Sonoma County: The Great Train Days

Choo-Choo! All Aboard the Children's Museum Express! Next Stop – TRAIN DAYS!

Join us on July 9th & 10th from 10:00 am – 3:00 pm for our Great Train Days Weekend!

Come view model trains and meet our neighborhood train experts including Redwood Empire Garden Railway Society, Coastal Valley Lines, and even more!

Your little conductor can build their own train tracks, dance to train music, and take a ride on the Live Steamers train!

1835 West Steele Lane
Santa Rosa, CA .

<https://www.cmosc.org/events/the-great-train-days/>

July Mystery of the Month: Ship Shape

Selected from *One Minute Mysteries: More Short Mysteries You Solve With Science!*
Take \$5 off this title this month only with code MMJULY at ScienceNaturally.com

Mystery

“Ahoy, matey!” Liam yelled, running into his older brother Theo’s bedroom.

“Go back to bed,” Theo growled. “It’s six o’clock in the morning! I need my sleep, you know.”

“But Theo, there’s part of a shipwreck out in the ocean! It looks like it’s been there for a hundred years!”

“Then it will still be there when I get up,” Theo grumbled and rolled over.

It was their family’s first morning of vacation after arriving late the night before at a beach they had never been to before. Liam was an early riser and had walked down to the beach just after dawn. Since Theo didn’t want to get up and no one else was awake, Liam went to his room to read.

When Theo finally woke up around noon and went to the beach where his parents had already set up chairs and blankets, he saw sunburned people under umbrellas and sand crabs scurrying around, but nothing in the ocean except waves.

“Have you seen a shipwreck out there?” Theo asked his parents.

“No, but we’ve only been here for an hour,” their father said to Theo. “We slept in a little. Then the three of us went straight to the grocery store while you slept.”

“After we put away the groceries we came here,” their mother added. “Liam told us about a shipwreck, but we haven’t seen it yet.”

“The shipwreck is out there, and I’ll prove it,” Liam said.

“How?” Theo asked.

Solution

“We just have to look for it about six hours from now,” Liam said. “I must have seen the shipwreck at low tide. Tides are caused by the gravitational pull of the Moon and are related to its orbit. A high tide comes about six hours after a low tide, and the next low tide comes about six hours after that. By the time Mom and Dad got here, the tide was already high enough to cover the shipwreck. If we look around six o’clock tonight, we should be able to see it.”

Mike’s thoughts:

- 1) Before sharing this “mystery” with your students, ask them to tell what high and low tides are and to explain what causes them.
- 2) Liam says that the gravitational pull of the moon causes tides, and that tides are related to the moon’s orbit. That’s pretty vague. Have students study the causes of tides and use diagrams to explain them.
- 3) Does the sun have any effect on tides?
- 4) What are neap and spring tides?
- 5) Obtain tide tables and have the students learn to read/use them, including how to adjust for where they are along the coast. Tables are available online or in print at sporting goods stores.
- 6) The July 4/July 11 issue of *Time* magazine has an article on using tides to generate electricity.

Sturgeon's Sawmill Demonstration Dates:

If you are interested in history or redwoods, you really should visit Sturgeon's Sawmill in Sebastopol. This is a steam-powered sawmill that is over 100 years old. They fire it up a few times a year to show people how sawmills used to work in the days when redwood forests seemed to be an inexhaustible resource.

Demonstration dates: Sept. 10-11 and Oct. 15-16.

Demonstration run hours are 10am-3pm.

info at: <http://www.sturgeonsmill.com>

From the Forestry Challenge Teacher Newsletter:

Ignited

We have a few different 1-week externships for teachers to explore various industries while earning \$1,000. We are especially looking for East Bay teachers to fill spots in the following weeks:

- [Water and wastewater](#) (July 18-22)
- [Alternative fuels](#) (July 18-22)

Learn about these industries through tours and job shadows, and earn \$1,000 to develop a lesson to bring them back to your classroom. [Apply](#) today!

If you have any questions, please email Emily Dilger (mlekt@gmail.com)

California Academy of Science's Teacher Workshops for Summer 2022

Ready to place some professional learning on your calendar? Cal Academy is offering both in person and virtual options – either way, you'll experience high-quality PD that will leave you feeling inspired and valued as an educator. While workshops are designed for a particular grade band, all educators are welcome.

Virtual PD on Zoom

- [Exploring your Environment with Math and Science](#)
Wednesday, July 13, 9 am - 12 pm | Grades 3-5
- [Low Floor, High Ceiling: Making Science Tasks More Spacious](#)
Wednesday, July 20, 9:30 am - 11:30 am | Grades K-12

Find out about more summer workshops from a variety of providers on the [CRS PD calendar](#)

Complete List:
Workshops

Philanthropic Ventures Foundation

GRANTS TO SUPPORT PUBLIC SCHOOL TEACHERS

Teachers come up with good ideas all the time, but don't have the resources to fund them or the time

to pursue arduous funding requirements. That's why we launched Teacher Resource Grants. These small but critically needed grants for teachers help to address inequalities in public education and build future generations of strong leaders.

[FOR MORE INFO](#)

Environmental Volunteers:

"Let's Go!" Field Trip Fund

The "Let's Go!" Field Fund formally known as the Transportation Fund (TF) launched in 2011 through a generous grant from the Environmental Education Funders Consortium. Through the "Let's Go!" Field Trip Fund, the Environmental Volunteers provides affordable, easy-to-schedule, efficient and safe transportation for low-income youth (K-12) in the San Francisco Bay Area that facilitates access to science and environmental education field trips.

[Click here for Application Info](#)

Maker Camp

Maker Camp on Make: Community is a free, 6-week online program providing resources (project ideas & step-by-step instructions, inspiration, materials, and community) to summer camps and young Makers interested in DIY, making, creating, crafting, hacking, tinkering, and learning. Maker Camp connects Camp leaders from across the globe as they create, invent and build projects like stop-motion animation, junk automata, and rainbow spectrometers.

Member sites and their campers spread across all 50 states and 6 continents. Sites included public libraries, Boys & Girls Clubs, makerspaces, 4-H Clubs, and community summer camps.

[Learn more here](#)

Lawrence Hall of Science: Investigate. Experiment. Problem-Solve.

School Programs

The Lawrence Hall of Science provides a range of school program options! Visit us to connect with science, technology, engineering, and math. Bring a Science Show or Science Festival to your site, where outreach educators specialize in bringing fun, engaging science activities, perfect for large groups of learners.

[CONTINUE READING](#)

Camp Tule (Laguna Foundation)

Session 2, July 11-15

Session 3, July 18-22

For students age 6-9

For students age 10-12

Camp Tule is a place where children are given space to nurture their creativity and spend time exploring and playing in nature. Each new day is filled with exciting discoveries like "catching" animal footprints in track boxes that the children make, spotting barn owls, egret, deer, jackrabbit, kingfisher, and red-tailed hawk, and playing lots of nature games that teach ecological concepts. And, what would an adventure day be without climbing trees? We do that, too!

[Register Here](#)

Planet Bee

**Hybrid Standards-Based Environmental STEM Education Program is Available Worldwide!
LESSONS ALIGN WITH THE NEXT GENERATION SCIENCE STANDARDS & THE COMMON CORE**

To meet the pressing need for quality standards-based Environmental STEM Education, we have developed a comprehensive hybrid program centered around the bee, that can be tailored to the needs of your classroom curriculum with differentiated activities.

This innovative remote program was developed by certified public school teachers with over 35 years of experience in the classroom and is designed to be used by the educator either through online learning or in-class lessons.

[FOR MORE INFO, CLICK HERE](#)

Protecting Western Monarchs

[Golden Gate National Recreation Area](#)

Iconic in North America, [monarch butterflies](#) are more than just beautiful with their vivid markings and bright orange color, they are also important pollinators. As they fly from flower to flower feeding on nectar, monarchs pollinate many types of wildflowers. They choose brightly colored flowers that grow in clusters, stay open during the day, and have flat surfaces that serve as landing pads for their tiny guests. However, there is one particular plant that is essential for monarchs — milkweed.

Female monarch butterflies will only lay their eggs on certain types of milkweed plants. Unfortunately, milkweed plants are often eradicated as noxious weeds. Urbanization, industrialized, large-scale farms, and drought conditions have also impacted milkweed populations. This, along with loss of winter habitat in California and Mexico, pesticide use, and climate change, contributes to the decline of western monarchs.

Taking Action

The National Park Service (NPS), along with partners and community scientists, are [taking action to help western monarch populations](#). Efforts include milkweed planting, pollinator festivals, community science monitoring, research, and habitat restoration. NPS staff also assist with butterfly counts, support a [community science program focused on mapping western milkweed population](#), and participate in International Monarch Bioblitzes.

[Read the full article here](#)

Bureau of Land Management EXPLORE YOUR PUBLIC LANDS

The wide variety of diverse landscapes across BLM-managed public lands offer visitors unique opportunities and memorable experiences as vast as the land itself. Please come prepared to explore more than 245 million acres of public lands and enjoy countless outdoor adventures – Please recreate responsibly and practice good [Outdoor Ethics](#)

[Check out the interactive map of YOUR public lands](#)

The Nature Conservancy: Places We Protect

Get out to explore the lands and waters you help us protect. [Find a preserve or a place we protect near you](#) on our interactive map.

National Park Trust: National Marine Sanctuary Elementary Resource Collection

The Park Trust is partnering with the [NOAA Office of National Marine Sanctuaries](#) to celebrate the 50th anniversary of the National Marine Sanctuary System!

We are happy to feature some of the best National Marine Sanctuary resources for elementary students –including videos, websites, and activities. From **sea turtles to sharks**, click below to start learning today!

[See the full website here](#)

TeenTechSF Summer Workshop Series

Online, Starting July 16th @2-3pm every Saturday

Join TeenTechSF for **TeenTechSF Summer Workshops (with online and in-person options)**, an amazing opportunity for teens to explore the world of STEM! All of our events are free and our award-winning workshops are peer-led.

We are offering the following STEM workshops in our **online** TeenTechSF summer series:

- July 16: Create Your Own Robot with OnShape
- July 23: Intro to App Development with MIT App Inventor
- July 30: Github 101: The Master Vault of Computer Coding
- August 6: Deep Blue Robotics: Robotics 101
- August 13: Intro to Game Development with Pygame
- August 20: Web Scraping with Python

This event is free and open to all teens, but space is limited.

REGISTER TODAY at 2022-ttsf-summerworkshops.eventbrite.com

JOBS:

Sonoma Land Trust Outings Guide (bilingual):

Do you love nature and introducing people to the outdoors? Sonoma Land Trust seeks an engaging community leader who is enthusiastic about connecting diverse audiences with the natural world and nature's solutions to climate change. Help grow support for land protection, biodiversity and environmental justice while exploring Sonoma Land Trust's nature preserves throughout Sonoma County. The Outings Guide bridges the

connection between people and nature across a diversity of Bay Area residents, with a special focus on increasing engagement with BIPOC, millennial and gen z community members, in addition to serving our existing audiences consisting of the general public, older adults and donors. This is a growth position, with the potential to take on additional responsibilities over time. Sonoma Land Trust will train the right candidate with aptitude and attitude to succeed. The Land Trust serves a diverse audience with broad cultural heritages, socioeconomic backgrounds, genders and orientations.

You can also point people here: <https://sonomalandtrust.org/career-center/#public>

El Camino High School is looking for a full-time teacher to join the highly collaborative biotechnology teaching team within the South San Francisco Unified School District. This is a truly unique position supported by our district's close partnership with Genentech, who provide a variety of support to our program from scientific expertise, real-world experiences for our students, and financial resources for running state of the art laboratory activities in our classrooms. In South San Francisco, the birthplace of biotechnology, we believe that it is critical to open up career paths that will enable our students to live and thrive in their home community long after they graduate from high school, and to be thoughtful, contributing members of their vibrant city. The ideal candidate will have a biology or chemistry teaching credential, and experience working in academic research or in the biotechnology industry. The most critical characteristics of a teacher joining our team are a belief that all students can and should be able to succeed in upper-level science classes, a willingness to be a part of a teaching team, and a passion for biological sciences and/or biotechnology.

If you have questions about the position, including about what and how we teach, and what it is like to be on our team, please contact Liz Beans at lbeans@ssfusd.org. If you are interested in learning more about El Camino High School, please reach out to Assistant Principal, Clare Jackson, at cjackson@ssfusd.org. You can apply directly for the position on [EdJoin](#).

NatureBridge currently has an opening for a **Director of Operations at our Yosemite campus**. If you've ever wanted to live and work at Yosemite, you should check out this role!

[Director of Operations](#) (Yosemite): This role leads all aspects of Yosemite campus operations for our residential Environmental Science programs. The DO is responsible for successful execution of all program logistics and exceptional customer service. The job involves overseeing onsite operations in multiple campus locations within Yosemite National Park. The DO works closely with all departments and Directors to support collaboration across the organization.

UC Berkeley's EAOP (Early Academic Outreach Program) is recruiting a couple of **math instructors** to teach math during their 6-week in-person [Pre-College Academy](#). Visit <https://aprecruit.berkeley.edu/JPF03381> to view the job description and apply.

The Center for Educational Partnerships seeks qualified temporary non-tenure track, **part-time Instructors (TSPs) for Summer to teach in the Pre-College Academy (PCA), a six-week college-preparatory summer program** hosted by the Early Academic Outreach Program (EAOP) at the University of California, Berkeley. EAOP partners with schools, districts, community organizations, and families to empower underserved students and prepare them for college and career success.

U.C. Berkeley

Early Academic Outreach Program

We are seeking outstanding **instructors (TSPs) who can teach courses in EAOP's Pre-College Academy, grades 9–11**. Successful candidates will create and implement an exciting theme-based writing course geared toward high school students who have completed their 9th and 10th-grade years or create the appropriate math curriculum that prepares students the following year.

The Tech (San Jose)

Facilitated Experiences Educator 1

The Tech Interactive is a family-friendly science and technology center in the heart of downtown San Jose. Our hands-on activities, experimental labs and design challenge experiences empower people to innovate with creativity, curiosity and compassion. The Tech is a world leader in the creation of immersive STEAM education resources to develop the next generation of problem-solvers locally, nationally and globally. We believe that everyone is born an innovator who can change the world for the better.

You will be an important member of the team that is at the heart of The Tech's mission to inspire the innovator in everyone. The Educator 1 works as part of a team of facilitators who are responsible for delivering high energy, interactive gallery experiences, including design-based learning programs and exhibits. Our facilitation values are centered on a learner-driven experience, where guests are encouraged to innovate and iterate. In this role you must be able to engage with visitors of all ages and backgrounds through our Design Challenge Learning style of facilitation and with exceptional guest service skills.

All of The Tech's open positions (including this one) are listed on this page: <https://www.thetech.org/about-the-tech-interactive/jobs/apply>

Headwaters Science Institute

We are looking for a full-time program manager, teacher, and camp director. This job requires good organizational, teaching, and verbal communication skills. The program manager will be required to work with both students and the classroom teachers in grades 6-12 as well as work with the high school students from the digital research program and summer camp kids ages 4-15. This position is located in the Northern California/Reno, NV, area.

Please share this news with your network and help us find the best candidate!

You can find the listing here for more details or to apply: <https://headwatersscienceinstitute.org/nowhiring/>
Headwaters is hiring a Summer Camp Director and School Program Manager. Join our team of passionate community members and scientists working to better science education for youths.

Forestry Institute for Teachers (FIT)

is a week-long residence workshop for California educators.

Join natural resource professionals and credentialed educators to explore forest ecosystems and the impact they have on our communities. 40 hours of Academic Credit available!

Participants receive:

- Hands on training in California Content Standards using [Project Learning Tree](#) and [Project WET](#) curriculum guides
- Skills and materials for action-oriented student and classroom projects
- Meals and lodging
- 3 Continuing Education Credits from UC Davis or CalPoly Humboldt
- \$200 curriculum project stipend

Contact forestryinstitute@gmail.com for more information

Humboldt, July 10-16 Humboldt State University, Arcata

School Garden Network

School Garden Network is hosting it's second Garden Summer Camp! We are looking for more campers who want to come have fun with us in the sun this summer! Limited scholarships are still available. For more information and to register: <https://www.schoolgardens.org/gardencamp2022-programs.html>

Chop's Teen Club has openings for all summer activities including fun in the art studio, tech lounge, gym, music studio, and kitchen. Come hang out on our rock-climbing wall, grab a snack in the café, and then play some board games with your friends! For teens in Sonoma County (grades 7-12), this is a place to be! Visit chopsteenclub.org to learn more.

Some interesting reading:

The July/August issue of **Smithsonian** includes:

- “Into the Forbidden Forest – an American biologist’s pioneering research in a Madagascar wilderness” (cover article)
- There’s an article on coal, and it includes a great graphic comparing our sources of energy, the CO2 that they give off, and the cost per megawatt.
- A short article on early humans’ tools
- A short article on a subspecies of red fox that is found in the Cascades...only about 20 breeding pairs!
- Our first national river...the Buffalo River in the Ozarks
- An article on Mary Sears, a woman oceanographer who played a vital role in WW II

The cover story of the July 4/July 11 double issue of **Time** magazine calls it “The Oceans Issue...Water’s Untapped Power.” It isn’t really a full issue on oceans or even ocean power, but it does have some interesting info on alternative energy sources.

The July issue of **National Geographic** articles include:

- “Wild About Sharks”
- “Why We Should Spare Parasites”
- Indigenous people reclaiming land
- “Why Cities are Going Wild”
- Rising waters in Java

TED Talks: Science Worth Knowing:

New science-related talks are frequently posted.

check it out at <https://www.ted.com/topics/science>

Science in the News from Sigma Xi

(Sigma Xi is a science honor society. You can sign up to receive their **bi-weekly** science e-newsletter at: <https://www.sigmaxi.org/news/newsletters>)

Some stories from recent newsletters include:

- Biofuel made using common bacteria
- Mere months in space may lead to decades of bone loss
- Study links flu vaccine to lower Alzheimer’s risk
- Researchers develop patch to detect COVID-19
- Study describes origins of all Earth minerals
- Insects may experience pain much like humans do
- Monkeypox virus detected on surfaces of patients’ rooms

Sci Tech Daily

Sci Tech Daily is a (you guessed it...) **daily** brief summary of current events in a variety of science fields, including general science, health, space, technology and others.

Go to <https://scitechdaily.com/> **Among many others, the July 7 edition included:**

- Keeping any light on while sleeping is linked to obesity, diabetes, and high blood pressure
- How immune response triggered by COVID-19 may damage the brain
- Ozone destruction over the north pole produces weather anomalies across the entire northern hemisphere
- How to build strength without bulk
- New research reveals how nuclear war would affect earth today
- Newly discovered type of stem cell could allow scientists to make organs in a dish
- Scientists have created worms that can kill cancer cells

Science Humor:

from Signals Holiday Gift Guide 2021:

- Engineer: Solving problems you didn’t know you had in ways you can’t understand
- Ever notice how many towns are named after their water towers?
- You matter. Unless you multiply yourself by the speed of light. Then you energy.

Hot (Cool?) Links:

Here's a note from Hollis Bewley, the coordinator for coastal programs for Stewards of the Coast and Redwoods:

The [Superb Wildlife website](https://www.superbwildlife.com) is all about tidepools in the Bay Area and includes biographies of common tidepool animals as well as some fun videos. The author, Michael Gallegos says "*I decided to create this website to help other people find, observe, and learn about their local animals. After exploring many areas, I realized that tidepools are wildlife hotspots and are the best places to go if you want to see a ton of animals and not leave things to chance.*"

One of the five beaches he recommends is Coleman Beach, which is actually the north end of Miwok. Shell Beach and Salt Point are also featured as well as Agate Beach (Duxbury Reef - Bolinas) and Mavericks.

<https://www.superbwildlife.com/coleman-beach>

Live and Learn

(in which Mike shares something that he's recently learned.)

I've just finished reading a book titled *Kindred – Neanderthal Life, Love, Death and Art*, by Rebecca Wragg Skyes.

While the book is interesting because of what it reveals about *Homo neanderthalensis* (or *Homo sapiens neanderthalensis*), I found the descriptions of how archaeologists draw conclusions from a wide variety of evidence most interesting. While there are apparently a lot more Neanderthal specimens from a greater geographic area than I thought, those conclusions seem to be based on a few specimens/samples. But they're still fascinating.

I had previously heard that many of us have Neanderthal DNA in our DNA, I hadn't known how wide spread it is. Apparently all people except those of purely sub-Saharan descent have some Neanderthal DNA.

The book could do with more illustrations and timelines, but is still very readable.

High Schools: Announcing pre-registration for Forestry Challenge - Fall 2022

Attention: Recently announced grant funding will enable us to offer the fall 2022 events free of charge!

Four event locations:

Santa Cruz - October 12 to 15 - Redwood Glen near Loma Mar

Shasta - September 28 to October 1 - Mountain Meadows Camp east of Redding

El Dorado - October 26 to 29 - Leoni Meadows Camp south of Placerville

San Bernardino - November 9 to 12 – Hume SoCal near Lake Arrowhead

Watch a one-minute [introductory video!](#)

The Forestry Challenge is an academic event for high school students in technical forestry and current forestry topics. Participants spend four days in the forest learning about the ecology and management of the forested landscapes that provide communities with water, recreational opportunities, wood products, and wildlife habitat. You can now complete [pre-registration](#) for any fall event in less than 5 minutes with our online form. For more about the program, visit the [Home](#) page of the Forestry Challenge website. Substitute teacher and transportation assistance are available on an as-needed basis. School groups (typically 4 to 10 students and a teacher chaperone) are welcome to attend any event that is the best fit for location, school schedule, and interest.

Announcing the Forestry Challenge 2022 Scholarships

Thanks to our partnerships with Redwood Empire and the Los Angeles Hardwood Lumberman's Club we are able to offer these two scholarships again this year.

The application period is now open, and closes August 10th.

[See our website for more details.](#)

Other Calendars:

The *Grapevine* focuses primarily on Sonoma and Marin Counties, but folks from all over northern California subscribe to it. Check out these sites for events beyond Sonoma and Marin:

- California Environmental Education Interagency Network (CEEIN): <https://www.coastal.ca.gov/publiced/ceein/calendar.html#calendar>
- The California Science Teachers Association has a Science Education Calendar at: <http://www.classroomscience.org/events>
- CA Regional Environmental Education Community (CREEC): <http://www.creec.org> (select your region)
- Bay Area Science Festival (S.F. Bay Area): <http://www.bayareascience.org/calendar/>
- Math-Science Nucleus (mostly East Bay): <http://msnucleus.org/>
- Marin County Parks: <http://www.marincountyparks.org/depts/pk/calendar>.
- The North Bay Science Discovery Day web site has a calendar of events. <http://www.northbayscience.org/what-s-next>
- *Sonoma County Gazette* Events Calendars for Nature, Learn, and Kids: www.sonomacountygazette.com
- the *Parents' Press* (parentspress.com) includes a calendar with events throughout the Bay Area, many of which cost money.
- **Forestry Educators** puts out a monthly **Teacher Newsletter** that includes information on resources, jobs, professional development, funding, and other topics that might be of interest. It is not just about forestry education. Contact Diane Dealey Neill at dianedealeyneill@gmail.com Tell her that I sent you ☺
- A resource for San Francisco Bay Area educators is the [Community Resources for Science's Newsblast](#) . If you would like to receive it, contact Corinn Brown at: crs@crscience.org .
- BayNature magazine: <https://baynature.org/events>

Science and Environmental Education Organizations

These organizations offer science or environmental education opportunities and/or **volunteer** or **citizen science** opportunities.

If I know of **volunteer** or **citizen science opportunities**, I've indicated that, but some may have opportunities about which I don't know.

Check their web sites for more information.

American Cetacean Society

Description: As the name implies, the ACS works to protect cetaceans (whales, dolphins, porpoises), and also supports research.

Web site: The San Francisco Bay chapter's website is: <https://www.acs-sfbay.org/>

The Aquarium by the Bay:

The web address is <https://bayecotarium.org/>

The teacher page is <https://bayecotarium.org/teachers/k-12-programs/>

Teacher Resources: The Aquarium of the Bay has curriculum resources for all grade levels, K-High School and they can be found under the teacher page on the website.

Audubon Canyon Ranch

Our Mission

Connecting nature, people and science in a rapidly changing world

Our Vision

Inspired and informed communities use scientific knowledge to build a resilient, sustainable society that respects the intrinsic value of our natural world.

They have several sites:

- Bouverie Preserve, Glen Ellen
- Cypress Grove Preserve, Marshall
- Martin Griffin Preserve, Stinson Beach
- Modini Preserve, Healdsburg

Volunteer Opportunities: <http://www.egret.org>

Audubon Society

(Madrone Audubon Society Chapter)

We promote public education, enjoyment, study and protection of the natural world, especially birds.

Check out the Madrone Audubon Society's schedule of walks and other events at: www.madroneaudubon.org

The *Madrone Leaves* newsletter has information about coming events and a variety of conservation issues.

Citizen Science Opportunities
Volunteer Opportunities

Bay Area Teen Science

This site posts opportunities for teens to get involved in science in a variety of ways. Although many of the postings are now outdated, they can still provide ideas and sites for teens to check back with later.

<http://bayareateenscience.org/>

Bay Nature

This locally produced (Berkeley) magazine has many interesting articles, great illustrations, and an event calendar. Check it out at: <https://baynature.org/>

Bird Rescue Center of Sonoma County

The center usually has an open house the first Saturday of the month.

They have an education program...You can arrange a visit to the Bird Rescue Center, or they can come to your school. Request by their online program request form

The Web site has added a “Virtual Resources” section. In it you can find links to many resources on birds, bird identification, and other interesting resources.

Volunteer Opportunities

Check out their web site at: <https://www.birdrescuecenter.org/>

Bodega Marine Lab

~~The BML offers public drop-in tours **most Fridays** from 2:00 – 4:00 for groups of less than 10 people. Group tours can be scheduled for a minimal fee. call 707-875-2211.~~

They are closed to the public for now, but I expect that they will reopen some time this summer.

They also have a **webcam** focused on Horseshoe Cove

Web site: <http://bml.ucdavis.edu/>

Cal Academy NightLife lectures

The California Academy of Sciences is now open daily. They require times reservations.

Website: <https://www.calacademy.org>

California Coastal Commission

Mission: Protecting & Enhancing California's Coast

The Commission is committed to protecting and enhancing California's coast and ocean for present and future generations. It does so through careful planning and regulation of environmentally-sustainable development, rigorous use of science, strong public participation, education, and effective intergovernmental coordination.

Check out these resources from the California Coastal Commission:

[Environmental Education Events Calendar](#)

The California Environmental Education Interagency Network maintains a calendar of events and opportunities relating to environmental education. Find an event or submit yours to the calendar.

[California Coastal Voices](#)

A project-based learning guide and online toolkit for middle and high school teachers. Consisting of six units (or "projects") that introduce students to coastal conflicts, challenges, and scientific and policy issues, the emphasis is on problem solving and communication. This learning guide was designed to address California's Next Generation Science, Common Core, and History-Social Science standards. Download teacher resources and student activities and access slideshows, videos, articles, and much more.

Find Lots More [Educator Resources](#) online.

website: <https://www.coastal.ca.gov/publiced/pendx.html>

CA. Native Plant Society

The Milo Baker Chapter of the California Native Plant Society (CNPS), named after the famous Santa Rosa Botanist, is located in Northern California's beautiful Sonoma County. CNPS is a statewide organization whose goals are to increase understanding and appreciation of California's native plants, and to preserve them and their natural habitats for future generations. Membership is open to all.

Citizen Science Opportunities

Volunteer Opportunities

For information go to: <https://milobaker.cnps.org/>

California Naturalist Program

The UC California Naturalist Program is designed to introduce Californians to the wonders of our unique ecology and engage the public in study and stewardship of California's natural communities. The California Naturalist program uses a science curriculum, hands-on learning, problem-solving, [citizen science](#), and community service to instill a deep appreciation for the natural communities of the state and to inspire individuals to become stewards of their local resources.

The mission of the California Naturalist Program is to foster a diverse community of naturalists and promote stewardship of California's natural resources through education and service.

The California Naturalist Program promotes environmental literacy and **stewardship** through **discovery** and **action**. Many other states have similar naturalist programs, but this is the first statewide program in California. To [become a certified California Naturalist](#), participants need to enroll in a 40+ hour course with one of [our partner organizations](#).

We work with over 45 partner organizations that deliver the course and have certified a community of over 2800 Naturalists around the state who have, in turn, volunteered over 175,000 hours in service to nature in the areas of education and interpretation, stewardship, citizen science, and environmental program support. Courses combine classroom and field experience in science, problem-solving, communication training and community service. Students are taught by an instructor and team of experts who are affiliated with a local nature-based center or natural resource focused agency. Upon completing certification requirements, participants are eligible for four academic credits through [UC Davis Extension](#) for an additional nominal fee.

Some CalNat programs are offering online or hybrid programs. See below.

Citizen Science Opportunities

Visit the Web site at: <http://calnat.ucanr.edu>

Center for Climate Protection

has a high school program called eco2school. Check it out at: <http://www.eco2school.org>

Children's Museum of Sonoma County

<http://www.cmosc.org/>

Mission

The Children's Museum of Sonoma County inspires curiosity and creativity through joyful, transformative experiences.

About Us

The Children's Museum of Sonoma County (CMOSC) was founded in 2005. Rooted in current early childhood research, CMOSC engages children in joyful discovery experiences that develop foundational skills, create lasting memories, and spark a lifelong love of learning.

Designed for children and their caregivers, the Children's Museum's experiential exhibits emphasize hands-on engagement and learning through play with a focus on art, nature, and science.

The Children's Museum proudly supports the work of parents, caregivers, and educators in raising happy, healthy, and strong children. Since opening its doors in 2014, it has become a valuable cultural resource and destination for Sonoma County.

website: <https://www.cmosc.org/>

Clean River Alliance

The mission of the Clean River Alliance is to remove trash from the Russian River watershed and to educate citizens about the problem of trash in our waters by creating more public clean-up events.

Volunteer Opportunities

<https://russianriver.com/business-directory/clean-river-alliance/#:~:text=The%20mission%20of%20the%20Clean,more%20public%20clean%20Dup%20events.>

The Climate Center

The Climate Center's work is guided by 3 core principles. All of our climate-safe policies and programs must be based on the latest science, help secure a [Just Transition](#) for fossil fuel workers, and prioritize [Climate Justice](#) for frontline communities. These principles inform our [Climate-Safe California campaign](#).

www.theclimatecenter.org

Coastside Land Trust

THE COASTSIDE LAND TRUST IS DEDICATED TO THE PRESERVATION, PROTECTION AND ENHANCEMENT OF THE OPEN SPACE ENVIRONMENT, INCLUDING THE NATURAL, SCENIC, RECREATIONAL, CULTURAL, HISTORICAL, AND AGRICULTURAL RESOURCES OF HALF MOON BAY AND THE SAN MATEO COUNTY COAST FOR PRESENT AND FUTURE GENERATIONS

The Coastside Land Trust, in Halfmoon Bay, sponsors webinars that may be of interest to you.

Their Web site is www.coastsidelandtrust.org

Coastwalk California

Mission

To ensure the right of all people to reach and responsibly enjoy the California coast. We are a California-wide non-profit volunteer driven organization that advocates for public access to our coast via the California Coastal Trail and offers educational & fun Coastal Trail guided hiking and camping adventures.

Vision

A well-stewarded California coast, highly prized as an irreplaceable commons, open for responsible use to all.

www.coastwalk.org phone: 707-829-6689

Community Resources for Science

CRS helps teachers build on that enthusiasm and bring meaningful science learning experiences to life in their classrooms. Children have a natural curiosity and a craving to learn. CRS works to nurture that learning by connecting classroom teachers with scientists, museums, enrichment providers, and professional development programs in order to bring more science learning experiences to students. CRS also helps individuals and organizations involved in science education to work together and become stronger partners for teachers and schools.

We have compiled some resources for teachers that we thought might be useful as we face school closures and move to more online learning opportunities while we practice "social distancing" in the wake of the spread of COVID-19.

<https://www.crscience.org/>

Community Soil Foundation

Student-Grown Farm Stand

Community Soil Foundation's mission is to cultivate the wellness of Sonoma County communities by offering land-based education, creating access to organic produce, and regenerating habitat and natural resources. We invite you to come to the Larkfield Community Garden & Learning Center every Wednesday afternoon for your weekly supply of nutritious, organic produce. All fruits, veggies, and flowers are grown by Mark West students and community volunteers using biodynamic and sustainable methods, with proceeds helping fund the garden. All sales are by donation. Look for our Farm Stand at 450 Noonan Ranch Lane and check out other happenings at www.communitysoil.org.

Volunteer Opportunities

CREEC

The California Regional Environmental Education Community (CREEC) Network is a program of the California Department of Education. The CREEC Network fosters regional partnerships throughout the state of California to promote environmental education and environmental literacy by providing teachers with access to high quality professional learning opportunities and education resources.

Along with statewide sponsors and partners, each of the 11 California CREEC Regions provides professional learning opportunities and resources to educators as well as foster communications among schools and organizations interested in supporting the environmental literacy of California's teachers and students. More information on the CDE's CREEC Network program is posted on the [CDE website](#).

Different areas of the state have different CREEC Regions. For information about events in your region, go to: www.creec.org, and select "regions" at the top

Daily Acts

Who We Are

We are a holistic education nonprofit that takes a heart-centered approach to inspiring transformative actions that create connected, equitable, and climate resilient communities. We believe in the power of our daily actions to reconnect people to self, community, and place, which helps to heal our society and planet.

Our Mission is to inspire transformative action that creates connected, equitable climate resilient communities.

Our Vision is to create healthy, just and sustainable communities built upon the daily actions of many people.

Volunteer Opportunities

<https://dailyacts.org/>

East Bay Regional Park District

The East Bay Regional Park District is a system of beautiful parklands and trails in Alameda and Contra Costa counties to the east of San Francisco. The system comprises nearly 125,000 acres in 73 parks, including over 1,250 miles of trails and 55 miles of shoreline. We acquire, manage, and preserve natural and cultural resources for all to enjoy now and into the future. Our parks are ideal for healthful recreation and environmental education. We invite you to enjoy hiking, biking, picnicking, horseback riding, camping, fishing, boating, golfing, and nature study in our parks. General Brochure [PDF]

<https://www.ebparks.org/>

Education and the Environment Initiative

Who We Are

The California Education and the Environment Initiative is a program of CalRecycle's Office of Education and the Environment (OEE). Our mission is to foster environmental literacy among all California students as part of a high-quality K-12 education. Environmental literacy builds critical thinking and analytic skills that prepare students to make informed decisions about issues affecting our world, and readies them for college and career success.

Our key environmental literacy implementation partners include the California Department of Education's California Regional Environmental Education Community Network and Ten Strands, a nonprofit organization that supports environment-based learning

<https://www.californiaeei.org/>

Environmental Forum of Marin

At Environmental Forum of Marin (EFM), we're all about education for action. Our founders started by protecting Marin's natural beauty and wild shorelines.

Web Site: <https://marinefm.org/>

Exploratorium

The Exploratorium isn't just a museum; it's an ongoing exploration of science, art, and human perception. Explore our vast [collection of online experiences](#) to feed your curiosity and [education resources](#) supporting online teaching and learning. [Subscribe to our weekly newsletter](#) and get fresh learning resources and virtual programming delivered to your inbox.

<https://www.exploratorium.edu/>

Forestry Challenge

The Forestry Challenge is an academic event for high school students in technical forestry and current forestry topics. Since its inception in 2003, the program has grown from one event to five, a complete buildout of the program in California.

Participants spend four days in the forest learning about the ecology and management of the forested landscapes that provide communities with water, recreational opportunities, wood products, and wildlife habitat. Youth benefit by better understanding the relationship of the forested environment to their community, by exposure to natural resource management as a potential career option, and by undertaking a rigorous critical thinking exercise which is timely and addresses current forestry topics such as wildfire, insects, and forest health.

Watch a one-minute [introductory video](#)!

<http://forestrychallenge.org>

Friends of Five Creeks

All-volunteer Friends of Five Creeks works hands-on for clean water, healthy watersheds, and natural areas that welcome both wildlife and people, from Berkeley to Richmond on the urbanized east side of San Francisco Bay.

Volunteer Opportunities

<http://www.fivecreeks.org/>

Friends of the Petaluma River

WHO WE ARE

In 2005 Friends of the Petaluma River was formed to connect our community with the wonders of the Petaluma Watershed. While much of our work is focused on conservation and education surrounding this sensitive habitat, we also believe that celebration plays a large role in our mission. Through events at the River Heritage Center, family programming around the Watershed and access opportunities for the public we bring our Watershed to life.

Our Mission

Our mission is to celebrate the Petaluma Watershed through education and stewardship; because every great River needs a true Friend.

Our Goals: Access, Education, and Conservation

- To pursue outreach and educational activities that will nurture enthusiasm and commitment in the watershed for long term sustainable stewardship.
- To monitor conditions and engage in activities that will reduce or prevent pollution and lessen other harmful impacts on the River and its wetlands.
- To foster a River Heritage Center as a community resource. A place to archive information, host events, administer programs, and coordinate river related activities.
- To promote access to the Petaluma River and Marsh for all community members to experience the beauty of this resource for themselves

*Are you incorporating environmental education into your classroom?
Or would you like help developing and implementing a project about the Petaluma Watershed?
Let the Watershed Classroom support you!*

Volunteer Opportunities

For more information visit us at www.watershedclassroom.org

For information about Watershed Classroom or Friends of the Petaluma River, go to: <http://friendsofthepetalumariver.org/>

Green Schoolyards America

Green Schoolyards America seeks to transform asphalt-covered school grounds into park-like green spaces that improve children's well-being, learning, and play while contributing to the ecological health and resilience of our cities. We are working to change the norm for school ground design, use, and management so that all children will have access to the natural world in the places they already visit on a daily basis.

Our programs support the living school ground movement, build relationships that help it succeed, and work to embed this perspective in our existing institutions and policy and regulatory frameworks.

<http://www.greenschoolyards.org/>

Headwaters Science Institute

The Headwaters Science Institute provides science and environmental education through student-driven research. It is headquartered in Soda Springs. They offer some high school programs for which they charge, butr also provide some free online learning opportunities.

<https://headwatersscienceinstitute.org/>

IGNITE (Inspiring Girls Now In Technology Education)

IGNITE is an organization focusing on achieving gender equity in STEM fields.

www.igniteworldwide.org

iNaturalist :

iNaturalist is a citizen science project and online social network of naturalists, citizen scientists, and biologists built on the concept of mapping and sharing observations of biodiversity across the globe.

No matter where in the world you are, **iNaturalist** brings people together. Whether you have a PhD or just love the outdoors, **iNaturalist** will bring you closer to nature and many fellow naturalists.

<https://www.inaturalist.org/>

Laguna De Santa Rosa Foundation

Founded in 1989, the Laguna Foundation is a place-based organization focused on the Laguna de Santa Rosa and the surrounding wetland communities. **We are a 501(c)3 non-profit with the mission to restore and conserve the Laguna de Santa Rosa, and to inspire public appreciation of this Wetland of International Importance.**

For details on Laguna Environmental Center events, go to their Web site and check out the Public Education section.

!

Volunteer Opportunities

<http://www.lagunadesantarosa.org>

LandPaths Outings and Events

LandPath's mission is to foster a love of the land in Sonoma County by creating ways for people to experience the beauty, understand the value, and assist in healing the land in their local communities.

Volunteer Opportunities

Lawrence (Hall of Science) at Home:

Welcome to The Lawrence at Home! On this site we will be sharing fun things for you to do at home or outdoors. Kids and families can look forward to exploring, investigating, discovering and inventing through DIY projects, meeting animal friends, science demonstrations and shows, astronomy and nature walks - PLUS, ways for parents to connect with each other and us.

(Includes live streaming programs (schedule posted), videos, science apps and activities, and a section on the science of COVID-19.)

<https://www.lawrencehallofscience.org/lawrence-at-home>

Marin County Parks Department

The Marin County Parks Department offers a variety of opportunities, including volunteer days and naturalist outings. They often partner with the nonprofit One Tam.

Volunteer Opportunities

Check them out at: <http://www.marincountyparks.org/depts/pk/calendar>.

Marin Municipal Water District

The Marin Municipal Water District sometimes has volunteer and citizen science opportunities.

Citizen Science Opportunities

Volunteer Opportunities

volunteerprogram@marinwater.org.

Marin Treks

Marin Treks Natural History Museum offers after school science classes, field trips, and classroom visits to elementary schools and preschools, as well as full and half-day camps during school vacation periods.

<http://www.marintreks.com/index.html>

Marine Mammal Center (Marin County)

The Marine Mammal Center is a wonderful field trip destination for schools and organized community groups such as scouts, camps, and after-school programs. They have a variety of classes available in their lab, have a “Sea to School” program with programs for all grade levels available to come to your school or site, an “Ocean Ambassadors” program for middle schoolers, information on marine mammals, and a variety of other resources.

Join them on the 2nd and 4th Sundays of each month for Marine Science Sunday - a FREE engaging ocean-inspired classroom series from our education experts. These interactive classroom programs are great for all!

Volunteer Opportunities

Go to <http://www.marinemammalcenter.org/> or phone 415-289-7325

NAAEE

(North American Association for Environmental Education):

NAAEE works to accelerate environmental literacy and civic engagement through the power of education.

<https://naaee.org/our-work/programs/covid-19-resources-tips-and-support>

EE News:

The NAAEE's monthly EE News includes articles or links to articles on environmental education topics. It also includes listings of Professional Development opportunities, Grants and Contests, and Resources for Students and Educators

https://webmail.sonic.net/?_task=mail&_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&_uid=23501&_mbox=INBOX&_safe=1&_action=show

NOAA

What can NOAA do for you? NOAA Needs Your Input!

NOAA wants to know what type of STEM multimedia and distance learning educators would like to use with students, and for their own professional development.

National Marine Sanctuaries Webinar Series

The National Marine Sanctuary Webinar Series provides educators with educational and scientific expertise, resources and training to support ocean and climate literacy in the classroom. This series targets formal and informal educators that are engaging students (elementary through college) in formal classroom settings, as well as members of the community in informal educational venues (e.g. after school programs, science centers, aquariums, etc.).

Past Webinars are archived and can be accessed from the site.

<https://sanctuaries.noaa.gov/education/teachers/webinar-series.html>

Novato Space Station Museum

Prior to COVID-19, the museum was open most Thursdays-Sundays, and often offered "telescope nights" and daytime solar telescope viewing.

Volunteer Opportunities

Go to <http://www.thespacestationca.org/> to find out about the Novato Space Station Museum and the events that they offer, including:

Occidental Arts and Ecology Center

Sometimes offers courses and events, especially in gardening and permaculture

Go to <https://oaec.org/events/>

OneTam

One Tam is a group that works to protect and enhance the Mount Tamalpais area. See also [Marin County Parks Department](#).

Citizen Science Opportunities

Volunteer Opportunities

For more information, go to: <http://www.onetam.org/>

The Petaluma Wetlands Alliance

OUR MISSION

In addition to preserving habitats, with particular emphasis on birds and overall biodiversity, the Petaluma Wetlands Alliance also works with the schools, governments, environmental organizations, and our community. We educate the public about the ecology, wildlife, and the value of wetlands. The PWA is dedicated to the stewardship, restoration, and expansion of publicly accessible wetlands and associated wildlife habitats. We are active in Shollenberger Park, Alman Marsh, and the Ellis Creek Wetlands.

Citizen Science Opportunities

Volunteer Opportunities

Find out more about PWA at <https://petalumawetlands.org/>

Pepperwood Preserve

Pepperwood's mission is to inspire conservation through science.

Pepperwood's 3,200 acre preserve serves as a refuge for over 900 species of plants and animals. We are leaders in ecosystem-climate research, producing critical science to help guide our region's

natural resource management and conservation planning. Pepperwood also offers environmental education opportunities for all ages to cultivate an ethic of conservation in our North Bay region.

Citizen Science Opportunities

Volunteer Opportunities

<https://www.pepperwoodpreserve.org/>

Planet Bee Foundation

Planet Bee Foundation is a 501(c)(3) environmental education nonprofit currently offering [virtual E-STEM lessons](#) centered around bees at **NO OR VERY LOW COST** in response to the pandemic. We have virtual live lessons with certified teachers or interactive asynchronous video lessons. We served over **20,000 students** around the country in 2020. [Watch our trailer on YouTube.](#)

Our comprehensive distance-learning program can be tailored to the needs of your classroom curriculum with differentiated activities that align with the **NGSS and the Common Core**.

99% of our virtual lessons have been provided at no cost in our dedication to social justice. Our pricing (if any) and sliding scale are listed [here](#).

Volunteer Opportunities

Please feel free to reach out with questions to programs@planetbee.org.

Point Reyes National Seashore

Point Reyes National Seashore Association's [Science at the Seashore](#) field trip program for school groups.

Join Us for Hands-On Discovery in Point Reyes!

Students have the opportunity to experience the excitement of discovery in natural habitat, improve science skills, increase awareness and inspire stewardship of our environment. Field trips are held in the restored Giacomini Wetlands, surrounding watershed creeks, or Point Reyes bays and beaches. Study equipment and waterproof footwear are provided; Minimum group size is 10 students; Some activities are season, tide, and group-size dependent; A fee is requested, but scholarships are available!

Hands-on activities include: Aquatic macroinvertebrate sampling, Wildlife tracking, Terrestrial invertebrate sampling, Water quality testing, Fish sampling, Bird surveys, Wetland plant studies, Soil and sediment studies, Habitat restoration, Creek profiling and hydrology, Sandy Beach Mole Crab Monitoring (LiMPETS), Marine debris surveys, Drakes Estero paleo geology and biology.

For information: www.ptreyes.org

Project Learning Tree

Project Learning Tree has developed some new curriculum resources that are available online. Check out the Winter Newsletter at: http://ucanr.edu/sites/PLT_UCCE/

The Branch is Project Learning Tree's e-newsletter. The March issue includes an article on "10 hands-on Science Projects to Teach About Pollution." Check it out at:

https://www.plt.org/educator-tips/science-projects-pollution/?utm_medium=email&utm_source=sharpspring&sslid=MzU2MbE0NrK0MLM0BAA&sseid=M7QwNbUwNzc0MgYA&jobid=d392442b-e64c-44f0-bdc5-cd1ea040889c

Project WET

(Water Education for Teachers)

The Winter California Project WET Gazette is 'live' on the [Water Education Foundation website](http://www.watereducation.org). Go to:

<https://www.watereducation.org/california-project-wet-gazette>

Redwood Region Ornithological Society

Redwood Region Ornithological Society was organized in 1962 to encourage the study and conservation of birds, other wildlife, and their natural habitat.

<http://www.rros.org/>

(Russian) Riverkeepers

Our Mission: to Inspire the Community to Protect the Russian River Forever.

Russian Riverkeeper has been fighting since 1993 to ensure a thriving river system and your rights to fishable, swimmable and drinkable waters.

Unfortunately, clean water is under new attacks from a rapidly warming climate, big agriculture and our government. Now, more than ever, your river needs vigilant enforcement of environmental laws and the care and commitment of people like you.

Volunteer Opportunities

<https://russianriverkeeper.org/>

Russian River Watershed Association

The Russian River Watershed Association (RRWA) is a coalition of eleven cities, counties and special districts in the Russian River watershed that have come together to coordinate regional programs for clean water, habitat restoration, and watershed enhancement. RRWA was formed

in 2003 to create opportunities for our member agencies to expand their stewardship role in the watershed.

Download an [RRWA Brochure](#)

Volunteer Opportunities

Please visit www.rwatershed.org to stay up-to-date on any upcoming environmentally friendly events and workshops around the watershed during the year.

San Francisco Bay Model Events:

For information on opportunities available at the Bay Model in Sausalito, including an events calendar, go to:

<http://www.spn.usace.army.mil/Missions/Recreation/BayModelVisitorCenter/StudentExploration.aspx>

City of Santa Rosa

The Park-A-Month Volunteer Program gives people the opportunity to help improve and clean parks in Santa Rosa.

Volunteer Opportunities

<https://srcity.org/1028/Park-A-Month-Program>

Science Buzz Café

The Science Buzz Café is dedicated to the night science tradition. It is for professional scientists who do it for the money and for the amateurs who do it for love. for info: <http://www.sciencebuzzcafe.org/>

BRINGING SCIENCE & CURIOSITY BACK INTO CULTURE ...

www.sciencebuzzcafe.org (707) 292-5281 daniel@sciencebuzzcafe.org

School Garden Network

MISSION

School Garden Network grows healthy students, families, schools, and communities through garden-based education.

<https://www.schoolgardens.org>

Shape of Life

Shape of Life offers classroom media and resources depicting the evolution of the animal kingdom on planet earth. Explore animal adaptation, animations, and behaviors along with the amazing scientists who bring their stories to life. Discover a rich selection of NGSS materials including lesson plans, readings, illustrations and activities that inspire a deeper dive into animal phyla. Shape of Life content is FREE to students and educators all over the world.

<https://www.shapeoflife.org/>

Sierra Club

The Sonoma Group of the Sierra Club meets Monday evenings at the Environmental Center, 55A Ridgway, Santa Rosa. The Conservation Committee meets at 5:30; the Executive Committee meets at 6:30. The public is welcome to attend. The chapter is also looking for volunteers, including outings leaders to lead hikes on a regular basis around the area. We are looking for volunteers throughout the chapter, including outings leaders.

<http://www.sierraclub.org/redwood/get-involved>

Volunteer Opportunities

Also see the Sierra Club's Green Life:

<https://www.sierraclub.org/sierra/green-life>

Slide Ranch (Marin County)

The mission of Slide Ranch (on the Marin Coast in Muir Beach) is to connect children to nature. We cultivate healthy bodies and minds and foster future generations of environmental stewards. By farming, cooking, caring for animals and exploring wilderness and the coast, we teach people of all ages to see the connection between their own health, a healthy food system and a healthy environment.

Go to: <http://slideranch.org/>

Sonoma Birding

Mission Statement – Sonoma Birding ∞ Sonoma Nature was founded in 2004 in Sonoma Valley, CA. as a volunteer “citizen science” based conservation organization that establishes sustainable bird and nature related festivals, activities, and programs for all ages, through a variety of partnerships in Northern California and throughout the United States and Canada.

Citizen Science Opportunities

Volunteer Opportunities

For information, go to www.sonomabirding.com

Sonoma Co. Agriculture & Open Space Preservation District

The District partners with several environmental and outdoor education organizations. For more information, go to the District Web site (<https://www.sonomaopenspace.org/>) and select Education and Outreach in the Get Involved tab.

Some of the programs are:

- FARMS Leadership (with Sonoma Resource Conservation District)
- Learning Laguna (with the Laguna Foundation)
- In Our Own Back Yard (with LandPaths)
- Teaching Environmental and Agricultural Memories (with Gold Ridge Resource Conservatin District)
- Wildlife Defenders (with Sonoma Ecology Center)

Sonoma County Astronomical Society

The Sonoma County Astronomical Society is an amateur astronomy club. They have telescope viewing programs and a variety of public outreach programs.

<https://www.go-astronomy.com/astronomy-club.php?ID=479>

Sonoma County Library

The Sonoma County Library often has programs that are science related. Select the Events tab at:

<https://sonomalibrary.org/>

Under that tab they have a “calendar” and a “list” choice. I find the list easier to use.

Note that you can also search by **location** or by the *title* of the program.

Upcoming events include such things as the following, most of which occur at different branches throughout the month.

- presentations by Sonoma County Master Gardeners
- Lego Club
- Hour of Code (Maker Studio)
- Build Club
- gardening for kids

Sonoma County Office of Education Science Ed. Offerings

SCOE occasionally science-related classes for teachers on their Web site (www.scoe.org):

Sonoma County Regional Parks

The Sonoma County Regional Parks offer a wide variety of activities, many of which are science or nature-related. Go to: <http://parks.sonomacounty.ca.gov> and scroll down to “Upcoming Events”. Some activities are purely recreational, some provide opportunities for community service, and all are educational!

Environmental Discovery Center Drop-in: Every Wednesday-Sunday

Volunteer Opportunities

Sonoma County Water Agency

They have a redesigned Web site and increased resource listings. go to:

<https://www.sonomawater.org/education>

Sonoma Ecology Center and Sugarloaf Ridge State Park’s Team Sugarloaf

Sonoma Ecology Center works to address challenges related to water supply and quality, open space, rural character, biodiversity, energy, climate change, and a better quality of life for all residents. Since 1990, we’ve worked to increase appreciation and stewardship of Sonoma Valley’s natural heritage and create measurable benefits in areas of land, water, climate change and biodiversity.

Vision

We envision a future where people, land, water, and wildlife thrive.

Mission

Our mission is to work with our community to identify and lead actions that achieve and sustain ecological health in Sonoma Valley.

Robert Ferguson Observatory:

Robert Ferguson Observatory is continually looking for new docents and volunteers of all ages to help bring the universe to the public. The Observatory is run by the Valley of the Moon Observatory Association, a 501(3)(c) non-profit, and has offered outreach-based astronomy and science programs to the public for almost 25 years. RFO is almost all-volunteer run and typically serves about 9,000 visitors annually. The observatory is located in Sugarloaf Ridge State Park and houses a 40-inch reflector telescope, the largest telescope in Northern California that is accessible to the public; a robotic 20-inch research-grade, “CCD” telescope; and an 8”, two-meter long refractor telescope. Prior experience or knowledge in astronomy is not necessary. Please go to rfo.org, click on “Volunteer” and fill out the volunteer application form online to get on the list for our next docent orientation and training! Questions? Contact Stephanie Derammelaere at 707-333-1331 or at sd@rfo.org.

Volunteer Opportunities

Sonoma Land Trust

The Sonoma Land Trust offers a variety of educational outings and volunteer opportunities for the public on protected lands. Check them out at: <https://sonomalandtrust.org> (select the “Explore” tab for the calendar)

Volunteer Opportunities

Citizen Science Opportunities

Sonoma/Petaluma State Historic Parks

While the Sonoma/Petaluma area state Parks primarily focus on history, they do have some science/environmental events and offerings such as twilight nature hikes.

For info, go to www.sonomaparks.org

Sonoma State University:

The Sonoma State University School of Science and Technology has a periodic online newsletter that gives news about the school and includes a link to the various department public speakers and events.

The link for the **speakers/colloquia** is: <http://www.sonoma.edu/scitech/pls/>.

SSU Center for Environmental Inquiry:

The Center's mission is to create an engaged and environmentally ready society, one where everyone has the skills to find solutions to the challenges facing the earth.

With the complex issues before us, such as climate change, overuse of resources, and declining biodiversity, we need to be awake, prepared and engaged. We need to know how to work across sectors and find innovative ways forward.

There is good evidence that we are not ready. Intuitive understanding of ecosystem processes is at an all-time low, and many professionals entering the workforce are not prepared to problem-solve or aware of the impact of ecosystems on economy and culture.

Citizen Science Opportunities

Volunteer Opportunities

<https://cei.sonoma.edu/>

- Full calendar of events: cei.sonoma.edu/calendar

- Recordings of past events: cei.sonoma.edu/calendar/past

Stewards of the Coast and Redwoods

Docent and Community Education Program

The Stewards of the Coast and Redwoods is the “Cooperating Association” that provides interpretive services for Armstrong Redwoods State Reserve and the Sonoma Coast State Park. Check their website for more information about these great opportunities for you and your students, **or call 707-869-9177**

Citizen Science Opportunities

Volunteer Opportunities

General Volunteers in Parks Orientation: August 28

www.stewardscr.org

Teen Tech San Francisco

Our mission is to inspire and empower the next generation of tech innovators. TeenTechSF is an interactive tech community for teens to innovate, collaborate, and create. Run by and for teens, all our events are free.

Since launching, TeenTechSF has connected 1,600+ teens on five continents with more than 100 tech leaders from Apple to Zynga offering presentations and workshops on design thinking, coding, app creation, robotics, 3-D printing, entrepreneurship, professional networking, tech careers, and global tech trends.

Like the [TeenTechSF Facebook page](#) for the latest news & events.

See the [TeenTechSF@MarchFor Science video](#) and [TeenTechSF March For Science Facebook recap/photos](#).

website: <https://teentechsf.org/#teentechsf>

Water Education Foundation

<https://www.watereducation.org/>

Wildcare

Wildcare is a (primarily) Marin County organization dedicated to the care and protection of wildlife. They have a variety of programs for teachers and volunteers.

Volunteer Opportunities

Check out Wildcare at: www.discoverwildcare.org

Wildlands Conservancy/Jenner Headlands Preserve Events

Relatively few people know about the Jenner Headlands Reserve on the Sonoma Coast. It is a beautiful place, and they provide some great opportunities.

Volunteer Opportunities

http://www.wildlandsconservancy.org/preserve_jenner.html

RESOURCES:

180 Studios

180 Studios is a 15,000 square foot warehouse conveniently located just off Highway 101 in Santa Rosa. Once fully open, the space will provide public access to professional equipment in a dynamic environment for multi-generational collaboration that supports the teaching, learning, and practicing of industrial arts, creative arts, engineering, and design.

For information, go to: <http://www.180studios.org/>

Bay Area Teen Science

this site posts opportunities for teens to get involved in science in a variety of ways. Although many of the postings are now outdated, they can still provide ideas and sites for teens to check back with later.

<http://bayareateenscience.org/>

Bay Model Visitor Center

The San Francisco Bay Model, in Sausalito, is a scale model of the San Francisco Bay. It is used for scientific research and modeling, and is also available for school tours. They also offer a variety of events and programs. Go to:

<http://www.spn.usace.army.mil/Missions/Recreation/BayModelVisitorCenter.aspx>

Brain Pop

Subscription based lessons on a wide variety of topics. <https://www.brainpop.com/>

California Academy of Sciences

The CalAcademy has a variety of programs that would be of interest to youth who are interested in science. They include

- Teen Science Night Digital Learning Tech Teens
- Careers in Science Intern Program
- Teen Advocates for Science Communication (volunteer program)
- Teen Think Tank Science Action Club

Find out more at: <https://www.calacademy.org/youth-programs>

CA Department of Fish and Wildlife Hatchery Education Program

The Hatchery Education Program offered by California Department of Fish and Wildlife's has opened their Fall enrollment period. Apply now for a free one hour session of multimedia learning about fish, watersheds & more! Dynamic activities illustrate key concepts and encourage critical thinking with subject matter aligned with learning standards specific to grade level. The application for Fish Academy, a guided activity based learning day at Don Clausen Fish Hatchery at Warm Springs Dam in early 2017, is also available now. Contact Sastra McGinley at sastra.mcginley@wildlife.ca.gov or (707) 280-3084 or visit www.wildlife.ca.gov/Regions/3/HEP

CA. Department of Parks and Recreation

The California Department of Parks and Recreation has several “Guides for Educators” available that may be of interest to *Grapevine* subscribers. These include resources for teaching about both historic parks and natural parks. Some are available for downloading, including some that I (Mike Roa) wrote. I can provide workshops/staff development on those that I wrote. You might be interested in taking a look at:

[The Conifer Connection: A Resource for Learning and Teaching about Coniferous Forests and Watersheds](#)

[A Guide to the Side of the Sea: A Teacher's Guide for Field Trips to Rocky Intertidal Areas](#)

[Redwood Ed: A Guide to the Coast Redwoods for Teachers and Learners](#)

[A Teacher's Guide to Sonoma State Historic Park](#)

[Allensworth: A Piece of the World, A Teacher's Guide with Student Lessons and Resources](#)

[California State Capitol Museum School Packet \(Teacher Version\) \(Student Version\)](#)

[Governor's Mansion State Historic Park Teacher's Guide](#)

} I wrote these three.

Indian Grinding Rock State Historic Park and Chaw'se Regional Indian Museum School Tour Information

Tijuana Estuary High School Teacher's Guide

Check them out at: https://www.parks.ca.gov/?page_id=25535

Climate Change Educational Materials from the U.S. E.P.A.

Find [climate education teaching tools](http://go.usa.gov/3AVx9) (<http://go.usa.gov/3AVx9>) and introduce your class to a [Student's Guide to Climate Change](http://go.usa.gov/3AV3G). (<http://go.usa.gov/3AV3G>)

Environmental Protection Agency Resources

The U.S. E.P.A. has a variety of resources that you may find useful. Check them out at: usaepa@service.govdelivery.com

U.S. E.P.A.

Activity Book for Elementary Age Students

How do you describe to students what the EPA does?

Use our newest activity book for elementary age students to help introduce them to EPA. Kids can learn about the different ways the EPA works to protect our environment and our health. It's a simple, straightforward guide suitable for children of all ages.

[Download the PDF.](https://go.usa.gov/xn946) (<https://go.usa.gov/xn946>)

Find more downloadable and hardcopy resources at the [National Service Center for Environmental Publications](https://www.epa.gov/nscep). (<https://www.epa.gov/nscep>)

Evolution Videos

Shape of Life offers FREE classroom videos depicting the evolution of the animal kingdom on planet earth. Students and educators from all over the world explore animal adaptation, animations, and behaviors along with the amazing scientists who bring their stories to life. We also offer a rich selection of NGSS materials including lesson plans, readings, illustrations and activities that inspire a deeper dive into the phyla that explain so much of our existence.

<http://www.shapeoflife.org/>

Geothermal Education Resources

The Geothermal Education Office, in Tiburon, has a wealth of teacher resources on geothermal energy, including slide shows, videos, classroom materials, maps, lists of web sites, and more. go to: <http://geothermaleducation.org/> or contact them at: 24hrcleanpower@gmail.com

Headlands Institute/Naturebridge...Sausalito

A variety of environmental science opportunities for grades K-12 are available at the Headlands Institute. They also have professional development workshops for teachers (formal and non-formal), and a variety of classroom resources. Go to: <http://www.naturebridge.org/golden-gate>

iNaturalist

iNaturalist is a Web site that allows **citizen scientists (like you and your students!)** to post pictures and information about plants, animals, and other science that they see in their yards and travels. It is a GREAT site for your students to not only explore but to contribute to. Go to: www.iNaturalist.org

An example of the use of iNaturalist at the Jenner Wildlands Preserve can be seen at:

http://www.inaturalist.org/projects/jenner-headlands-preserve-inaturalist-notebook?utm_source=Jenner+Headlands+Community+Meeting+2015&utm_campaign=JHP+Analytics&utm_medium=email

and another example can be found at: www.protecthabitat.com

Resources from the Marin Co U.C. Cooperative Extension Service

The Marin County U.C. Cooperative Extension Service has teaching materials on a variety of topics, including sudden oak death, trees/forestry, stewardship, agriculture, and more.. Go to:

http://cemarin.ucanr.edu/Programs/Custom_Program816/Environmental_education_resources/

Marin Co. Resource Links:

The County of Marin has compiled a list of environmental education resource links for adults and for kids. Go to: <http://www.marincounty.org/depts/pw/divisions/mcstoppp/archive/resources-for-schools>

Marin Master Gardeners

Dig It. Grow it. Eat it. A workshop

A one-day workshop on edible plants and nutrition for third and fourth graders, led by UC Marin Master Gardeners and held at the Marin Art and Garden Center. Students will learn to identify edible plant parts and about how plants grow, including the science of pollination and propagation.

- **Station 1 - Edible Plant Parts**
- **Station 2 - How Plants Grow**
- **Station 3 - Plant Seed Science**
- **Station 4 - Plant Propagation**
- **Station 5 - Get in the Dirt**
- **Station 6 - Plant Pollination**

If you are interested in this program, please contact UC Marin Master Gardeners Help Desk.

Email: HelpDesk@MarinMG.org, or call: (415) 473 – 4204

Marin – Sonoma Mosquito Abatement District

Free Science Presentations

The Marin/Sonoma Mosquito & Vector Control District offers free presentations about vectors (mosquitoes, yellowjackets and ticks) to any school in Marin and Sonoma Counties. The presentations focus on the biology of vectors and how students can protect themselves from these critters. Visit <http://bitly.com/educationdept> for more information, or contact Eric Engh at erice@msmosquito.com to be added to our scheduling list.

Mystery Science (a.k.a. Mystery Doug)

Lessons based on searching for answers to questions on a variety of topics. Schools or teachers can try out some of these lessons for free. Fee for unlimited access.

www.mysteryscience.com

Ocean Currents Radio Program

The first Monday of every month Cordell Bank National Marine Sanctuary produces a live radio program on Community Radio for West Marin called Ocean Currents. Hear from ocean experts as you learn about the importance of a healthy ocean.

Broadcast live in the West Marin listening radius and live online at www.kwmr.org, 1-2 pm. The shows are all archived on the Cordell Bank sanctuary [website here](#), or you can subscribe to the podcast.

Looking for a good resource online to get ocean wildlife photos for educational use?

Check out the [National Marine Sanctuaries online media library](#)

Download photos and video footage for free for educational use and check out the marine sanctuaries online encyclopedia. There are 4 National Marine Sanctuaries in CA. Do you know which ones are closest to you?

NOAA Resources for you

The folks at the Cordell Bank National Marine Sanctuary and the National Oceanographic and Atmospheric Administration (NOAA) have a variety of resources and opportunities available. Check the opportunities out at <http://cordellbank.noaa.gov>

Planet Bee Foundation

[Planet Bee Foundation](#) is a Bay Area nonprofit dedicated to creating a green-minded generation through environmental stewardship, using the lens of the struggling honey bee to teach the power of individual action. We have expanded our offering of hands-on educational programs, each of which can be individually tailored to fit a school's needs, wants, and location. Every lesson is in line with Next Generation Science Standards and grounded in the philosophy of E-STEM learning. We are now taking sign-ups for the 2018-19 school year! Our calendar fills up quickly, so check out our website at planetbee.org and sign up now!

Planet Bee now offers one-day and year-long programs. The [school program overview page](#) on our website lays out each program offering, their alignment with E-STEM and NGSS, and our updated pricing structure. Need-based discounts and sponsorships are available.

All of our programs are developmentally appropriate and designed to address all learning styles. Most programs involve observation of (contained) live bees, games, hands-on activities, and plenty of room for inquiry, creativity, exploration, and discussion. We focus on conservation techniques and environmentalism in every program.

One-day workshops include: [Humble Honey Bee](#), [Bee-ometry](#), [Native Bees of California](#), [Wanna-Bee an Engineer?](#), [Hive Dive Live](#)

Year-long programs include: [ZomBee Watch](#), [Adopt-A-Hive](#), [Wanna-Bee an Engineer?](#), [Honey Bee Series](#), [Native Bee Series](#), [All Bees Series](#)

We have also added a new format for [High School Programs!](#)

Please email our Program Director, Sarah Thorson, at programs@planetbee.org if you have any questions, or sign up for programs via the online registration forms on our website, www.planetbee.org. Together we can change the world - one bee and one student at a time!

Point Blue (Point Reyes Bird Observatory)

At Point Blue, our mission is to advance the conservation of birds, other wildlife, and ecosystems through science, partnerships, and outreach. Our 140 scientists work to reduce the impacts of habitat loss, climate change, and other environmental threats while promoting nature-based solutions for wildlife and people, on land and at sea.

In addition to the scientific work done by the folks at Point Blue, they have a variety of educational programs. Go to:

<http://www.pointblue.org/>

Sonoma County Wildlife Rescue

Presentations

We love to give educational presentations to groups of all ages! We make each presentation to match your group's unique needs. We can talk on a variety of subjects, including ecology, wildlife rehabilitation, and cohabiting peacefully with wildlife. Presentations may include Powerpoint, skits, games, or specimens.

Tours

Each presentation at SCWR includes a tour of our Educational Wildlife Community. Our community is comprised of non-releasable wildlife in natural enclosures. Animals include mountain lions, coyotes, raccoons, and many more!

If you would like to sign up for one of our presentations, please call (707) 992-0274 or email us at education@scwildliferescue.org.

Web site: <http://www.scwildliferescue.org/presentation-at-scwr.html>

For information, contact Linnaea Furling at: education@scwildliferescue.org or 707-992-0274

Sonoma Resource Conservation District:

Education

LandSmart Education® creates connections and inspires conservation through a series of engaging educational opportunities for community members of all ages. Youth programs offer innovative hands on learning experiences at local farms. A distinctive public outings series highlights local protected agricultural properties and the importance of conservation as a tool in working landscapes in partnership with local landowners. Our annual workshops are designed to deliver cutting edge information and resources about land management techniques available through RCD and partner programs with topics including water management and conservation, fish and wildlife habitat enhancement, erosion control, soil health, and carbon sequestration.

Education programming includes:

- FARMS Leadership Program- high school youth
- TEAM Program field trips- elementary school students
- Agricultural Heritage Series- for members of the public
- LandSmart Workshops- designed for landowners and managers

The California Academy of Sciences, the Exploratorium, and other organizations periodically offer free “Teen Science Night” events. Partners include Space and Science Museum, de Young Museum, Oakland Zoo, San Francisco Zoo, Marine Mammal Center, NASA and others. Do (or have your students do) an Internet search for “Teen Science Night” for upcoming events.

Teen Tech San Francisco

Our mission is to inspire and empower the next generation of tech innovators. TeenTechSF is an interactive tech community for teens to innovate, collaborate, and create. Run by and for teens, all our events are free.

Since launching, TeenTechSF has connected 1,600+ teens on five continents with more than 100 tech leaders from Apple to Zynga offering presentations and workshops on design thinking, coding, app creation, robotics, 3-D printing, entrepreneurship, professional networking, tech careers, and global tech trends.

Like the [TeenTechSF Facebook page](#) for the latest news & events.

See the [TeenTechSF@MarchFor Science video](#) and [TeenTechSF March For Science Facebook recap/photos](#).

This Week in California History...

is a new site for learning about California history, including California’s science and environmental history. ThisWeekinCaliforniaHistory.com is a digital playground for California history and geography. It posts what happened in California over 500 years a week at a time; from natural history to LGBT milestones and including science events like 19th century patents by women in California. The site is free, non-commercial and full of interesting content.

U.S. Forest Service:

You may now order FREE sets of scientist cards from our web site! The cards feature Forest Service scientists and are a great way to introduce students to different science careers. To view the variety of cards we have, please visit <http://www.naturalinquirer.org/scientists-v-92.html>. We also have 2 lesson plans to accompany the cards. These lesson plans are available as pdf files on the web page listed above and the direct links are: <http://www.naturalinquirer.org/UserFiles/File/FinalScientistsCardSeriesLessonPlan.pdf> and [http://www.naturalinquirer.org/UserFiles/File/CardLessonPlans_StealingBundles\(1\).pdf](http://www.naturalinquirer.org/UserFiles/File/CardLessonPlans_StealingBundles(1).pdf).

To order your free sets of cards today, please visit <http://www.naturalinquirer.org/Scientist-Card-Ordering-Page-v-155.html>.

Wet Gazette

The Water Education Foundation and California Project WET have changed the format for their Web site for water education resources. This excellent source for water education resources includes:

- Trending: What's Happening Now in California Water
- Water Topics: News, Events, and Information by Topic
- Aquaforia: What News You Need to Know
- Aquapedia: An Online Water Encyclopedia
- A Quicklink section giving upcoming events, and resources for purchase

For the spring issue of the Project WET Gazette, go to:

http://www.watereducation.org/publication/spring-2018-california-project-wet-gazette?utm_campaign=Welcome%20to%20Spring%2C%20California%20Project%20WET%20Alumni%21&utm_medium=email&utm_source=bundle_and_blast

For everyone seeking workshops, we have a variety for you to choose from this summer and a few already posted for the fall at the Foundation's website at [workshops](#) and [Special Workshops and Events](#). We also have lots of non-school related 'Events' for those who just want to get away!

Wildcare/Terwilliger Nature Education Programs

The Wildcare's Terwilliger Nature Education Programs offer a wide range of environmental education opportunities for K-12 classrooms, including:

-Live Wildlife Ambassador Program: Three wildlife ambassadors will visit your classroom for an unforgettable presentation. Possible wildlife visitors include a Northern Spotted Owl, Virginia Opossum, California Desert Tortoise, Red Tailed Hawk, Gopher Snake and many more!

-Nature Hikes: Guided discovery hikes are offered at four locations (Spring Lake, Miwok Meadows, Ring Mountain, Muir Woods)

-Nature Van: Students will explore touchable taxidermy, bones and biofacts in this interactive presentation at your site. Choose from a variety of topics including California Wildlife, Birds of a Feather, Marvelous Mammals, Redwood Giants, Wild Wetlands, Ocean Adventures and Going Green.

-Center Tours: Meet our non-releasable rescued wildlife ambassadors in a guided tour around our outdoor courtyard and museum. Each tour includes a special animal encounter with one of our wildlife ambassadors.

Each classroom automatically qualifies for a scholarship that matches the percentage of the student body enrolled in the Free and Reduced Meal Program.

For more information or for additional teacher resources, visit <http://www.wildcarebayarea.org/education> or email tory@wildcarebayarea.org

WATER WEBSITES OF INTEREST

Visit the USA

Here you will find lots of great information and tips on visiting and traveling in the USA. No two trips are alike, so you will find information in this section for a variety of trip types. Whether you prefer staying in a resort or camping under the stars, the site includes details travelers need to be safe and happy a trip. Being prepared early and knowing what to expect will help reduce traveler stress and be more able to enjoy the unexpected events of travel. This website has done a lot of the 'Wet Vacation' research on states for students – and each state description often includes links to state travel sites that highlight regions within the state, such as the California travel website below.

Visit California

If you know which part of California is of interest but you still need some guidance, click on “*Map*,” and then explore one of the 12 geographical regions of the state. We’ve organized our content—including videos, a printed visitor’s guide and even [travel tips](#)—with an eye toward helping find what you want quickly and easily. Searching this site is simple: If you already know what you’re looking for, type the keywords into our search bar at the top of the page. The “hamburger” menu in the top right corner of the page is another great resource—it has links to articles and other content organized around interests.

National Park Service: [Plan Your Visit](#)

Are you ready? Whether you want to explore local places or plan a vacation, you’ll [find a park](#) to suit your interests! The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. This is a wonderful website to pair with or expand on *‘Discover the Waters of Our National Parks’* (p: 495) or [the California version of the activity!](#)

U.S.G.S. – [The National Map](#)

As one of the cornerstones of the [U.S. Geological Survey’s National Geospatial Program](#), The National Map is a collaborative effort among the USGS and other Federal, State, and local partners to improve and deliver topographic information for the Nation. It has uses ranging from recreation to scientific analysis to emergency response. The National Map Viewer is the one-stop destination for downloading map data and products. It uses easy to navigate foundational base maps and makes it simple to download products such as the US Topo.

[U.S. Climate Data](#)

The purpose of the U.S. Climate Data is to inform people about the climate in the United States. This website was developed by Your Weather Service. The website includes monthly and daily data for temperature, precipitation, snowfall and sunshine for multiple locations in every state. The monthly data also includes a climograph of the average precipitation, maximum and minimum temperature by month for each location that can be opened separately in its own page to copy. Each location also includes Google map link to see where it is located and a link to the current weather forecast at that location. The page also links to [climate.eu](#) where one can find monthly data for countries in Europe and Africa.

NOAA: [U.S. Climate Atlas](#)

These maps use daily observations of temperature and precipitation from over 10,000 stations in the U.S. based on new methodologies to quality control the daily data, summarize the daily data into monthly values and the creation of maps to visualize the information. There are maps for minimum temperature, maximum temperature, and precipitation. There are two types of data that can be displayed; maps for a particular month and year from 1895 to present, or climatology maps. The climatology maps represent average values from 1981 to 2010. These are also known as the “1981-2010 Normals”.

NOAA: [Defining Climate Normals](#)

You’re looking forward to taking a much-deserved vacation in four months, and you want to visit a U.S. city you’ve never been to before. So, how do you decide where to go? Perhaps you’ll consider places where you can expect your ideal temperatures. But, at four months out, your trusted weather forecast probably won’t be much help in finding locations that meet your temperature criteria. Fortunately, our scientists have calculated the “normal” temperatures you can expect to see each month at locations across the United States. We call them [Climate Normals](#), and we compute a new installment every decade.

ESRI: [Severe Weather Public Information Map](#)

Manage your severe weather response with live feeds and sensor data. This map features live feed layers for Severe Weather across the United States and Canada and displays the predicted ice accumulation for the next 72 hours across the Continental United States. Data are updated hourly from the National Digital Forecast Database produced by the National Weather Service.

NOAA: [Climate Data Primer](#)

Heading out for a walk on a chilly spring morning, you notice misty clouds on the hills in the distance. You’re feeling eager for summer to arrive, but the hillsides are just beginning to green up after the end of winter. You wonder, “Is it cooler than usual this spring? I think I’m usually wearing shorts by this time of year.” Thinking about the weather, you recognize what you’re really concerned about is if it will rain on your barbecue this weekend.

NOAA: [Historical Climate Summaries – New Version](#)

The Regional Climate Centers (RCC) deliver climate services at national, regional and state levels working with NOAA partners. The Regional Climate Center data interface is being updated, but you can already start using the new version. Click ‘OK’ on the note about the page not loading Google Maps correctly, then choose one of the two ways to use the map as described below the map. Click on any data point that appears to get more data than you probably want! This website includes the ‘30-year normals’ used in the U.S. Climate Data locations, the maps in the U.S. Climate Atlas – AND you can get all the raw data available for the life of each gauge on the RCC map!

NOAA: [Comparative Climatic Data](#)

The Comparative Climatic Data tables of meteorological elements outline the climate conditions at major U.S. weather observing stations, Puerto Rico, and the Pacific Islands. The stations list is alphabetically by state. The table arrangement is so a single table of the same element allows the user to compare the values for different locations. Some elements will not be in the table for weather stations that do not regularly report that element. This site also allows users to [view data and graphs of temperature and precipitation Climate Normals](#) for over 9,800 stations across the United States.

US EPA: [Climate Change Indicators: Weather and Climate](#)

Rising global average temperature is associated with widespread changes in weather patterns. Scientific studies indicate that extreme weather events such as heat waves and large storms are likely to become more frequent or more intense with human-induced climate change. This chapter focuses on observed changes in temperature, precipitation, storms, floods, and droughts.

Real World Learning Objects: [Using Excel to Create a Climograph](#)

A climograph is a chart commonly used to graphically display both annual temperature (highs, lows, and averages) and precipitation information for a city or region. Meteorologists and climatologists use climatograms to understand the general climate of a region. They are also frequently included in travel books and tourism brochures so interested visitors can select the “best” time of year to visit a certain location. This website walks one through [how to use a spreadsheet program to create a climograph](#), and then use and analyze the graph to make a recommend times of the year to visit their area of study.

GardenZeus: [California Climate Zones](#)

The same weather and climate factors that may affect vacation plans also come into play when planning what to plant in your garden. GardenZeus California Climate Zones were developed by taking into account many factors including seasonal climate, temperature averages, elevation, frequency of frosts and precipitation. The website includes a wonderful synopsis of the prevailing weather and climate in each of their California climate zones, which upon clicking on shows a list of garden plants recommended for the region.

Desert research Institute: [Stories in the Snow](#)

DRI is pioneering an exciting and unique approach to the science of snow. The Stories in the Snow project engages community members as citizen scientists in real data collection and research throughout the Sierra Nevada. Every snowflake is unique, and the shape of freshly-fallen crystals can tell us about real-time atmospheric conditions. Using smartphone technology, you can help track the path a snowflake has taken through the atmosphere!

[California Project WET Supplemental Materials Page](#)

Remember to check this Water Education Foundation web page to find California specific supplements and other materials for use with Project WET activities, including other activities tied to weather and climate such as the California version of *‘Discover the Waters of Our National Parks,’ ‘Snow and Tell’ or ‘Back to the Future.’*