

Brought to you by  
Mike Roa  
mroa@sonic.net

# Grapevine



April, 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](mailto: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](mailto: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 **May 5**. The next issue will include events approximately through **Sunday May 15**.

## **Sharing...resources, information, opportunities**

Although it isn't specifically science or environmental education, I thought I would share the following. It was shared with me by a former student (from 1972!) via Facebook. It isn't startling or revolutionary, and maybe a bit hyperbolic, but maybe worth thinking about.

**ATTENTION ALL TEACHERS AND PARENTS**

**This is an article that needs to be repeated:**

Every Friday afternoon Chase's teacher asks her students to take out a piece of paper and write down the names of four children with whom they'd like to sit the following week. The children know that these requests may or may not be honored. She also asks the students to nominate one student

whom they believe has been an exceptional classroom citizen that week. All ballots are privately submitted to her.

And every single Friday afternoon, after the students go home, Chase's teacher takes out those slips of paper, places them in front of her and studies them. She looks for patterns.

Who is not getting requested by anyone else?

Who doesn't even know who to request?

Who never gets noticed enough to be nominated?

Who had a million friends last week and none this week?

You see, Chase's teacher is not looking for a new seating chart or "exceptional citizens." Chase's teacher is looking for lonely children. She's looking for children who are struggling to connect with other children. She's identifying the little ones who are falling through the cracks of the class's social life. She is discovering whose gifts are going unnoticed by their peers. And she's pinning down- right away- who's being bullied and who is doing the bullying.

As a teacher, parent, and lover of all children – I think that this is the most brilliant Love Ninja strategy I have ever encountered. It's like taking an X-ray of a classroom to see beneath the surface of things and into the hearts of students. It is like mining for gold – the gold being those little ones who need a little help – who need adults to step in and TEACH them how to make friends, how to ask others to play, how to join a group, or how to share their gifts with others. And it's a bully deterrent because every teacher knows that bullying usually happens outside of her eyeshot – and that often kids being bullied are too intimidated to share. But as she said – the truth comes out on those safe, private, little sheets of paper.

As Chase's teacher explained this simple, ingenious idea – I stared at her with my mouth hanging open. "How long have you been using this system?" I said.

Ever since Columbine, she said. Every single Friday afternoon since Columbine.

Good Lord.

This brilliant woman watched Columbine knowing that ALL VIOLENCE BEGINS WITH DISCONNECTION. All outward violence begins as inner loneliness. She watched that tragedy KNOWING that children who aren't being noticed will eventually resort to being noticed by any means necessary.

And so she decided to start fighting violence early and often, and with the world within her reach. What Chase's teacher is doing when she sits in her empty classroom studying those lists written with shaky 11 year old hands - is SAVING LIVES. I am convinced of it. She is saving lives.

And what this mathematician has learned while using this system is something she really already knew: that everything – even love, even belonging – has a pattern to it. And she finds those patterns through those lists – she breaks the codes of disconnection. And then she gets lonely kids the help they need. It's math to her. It's MATH.

All is love- even math. Amazing.

Chase's teacher retires this year – after decades of saving lives. What a way to spend a life: looking for patterns of love and loneliness. Stepping in, every single day- and altering the trajectory of our world.

TEACH ON, WARRIORS. You are the first responders, the front line, the disconnection detectives, and the best and ONLY hope we've got for a better world. What you do in those classrooms when no one is watching- it's our best hope. copied for hope to save more Children

## North Bay Science Discovery Day

The (in person!) 2022 North Bay Science Discovery Day is scheduled for May 15 at the Sonoma County Fairgrounds! If your organization would like to participate by providing some hands-on science activities for kids, or if you would just like more information, go to: <https://www.northbayscience.org/>

### Science Challenge:

I have just about decided **not** to organize more Science Challenge events. I think that they have been a great experience for the students, but I think it's time for somebody else to take it over if it is to continue.

So...It would be wonderful if somebody would like to take over the Science Challenge. I'd love to talk anybody who might be interested. I'd help you/them.

If you or a friend are/is interested, please email me by the end of April to discuss it.

Mike: [mroa@sonic.net](mailto:mroa@sonic.net)

# HAPPY EARTH DAY/WEEK/MONTH!

Check your local papers for happenings in your area.

## Upcoming Offerings from Stewards of the Coast and Redwoods:

### Birding for Beginners

Sunday, April 10, 2022 8:30 am - 11:30 am

[MORE INFO](#)

### Pinniped Monitoring Volunteer Training

Thursday, April 21, 2022 10:00 am - 12:00 pm

On Zoom

[MORE INFO](#)

### Sonoma Coast Wildflower Hike with Dr. Laura Morgan

Sunday, May 22, 2022 9:00 am - 12:00 pm

Sonoma Coast wildflower education.

[MORE INFO](#)

## **TeenTechSF STEM Inclusivity Forum - "Diversity in Tech: Closing the Gap"**

Online, April 9th Saturday 9:30AM-12:30AM

Join us for our annual STEM Inclusivity Forum featuring Camile Tate, Head of Talent at Strava's "Unpaved Road To Tech: Lessons, Overcoming, and Journey to Impact" opening speech and representatives from big tech companies such as Jasmine Talavera, IT Engineer at Google and Justin Friend, Head of Customer Onboarding at Adobe. You will also be able to explore various STEM Opportunities such as internships and summer programs from organizations such as Dev/Mission, Technovation, CodeTenderloin, NexGeneGirls, OpenBrackets, and MissionBit.

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

REGISTER TODAY at <https://2022-ttsf-stem-inclusivity-forum.eventbrite.com>

## **Upcoming Classes & Events at Pepperwood:**

Saturday, April 16 - **Discovering Reptiles & Amphibians** - 9am-1pm

Learn about our local reptiles and amphibians during this fun and informative adventure at Pepperwood. Ages 10 and up welcome! [Click here to learn more and register.](#)

Saturday, April 23 - **Exploring the Mysteries of Moths** - 6:30pm-9:30pm

Learn about our local moth species and their fascinating lifestyles, during this evening program with entomologist Chris Grinter. We'll set up a "moth sheet" to see which species we can find and ID! [Click here to learn more and register.](#)

**TeenNat 2022!** Applications are now open for this FREE 5-week youth summer conservation science program based at Pepperwood Preserve, open to students entering grades 10, 11, and 12. Program runs June 28-July 28, 2022. [Click here to learn more and for the application.](#)

**Eco-Adventure Summer Camp at Pepperwood** - Ages 10-14

Spend each day outdoors, exploring the grasslands, forests, and ponds of our 3,200 acre preserve. We will practice hiking skills including trail safety and leave no trace principles, and get to know the plants and animals that call this region home – searching for tracks and learning to identify the flora and fauna we find. Campers will leave this week with new friendships, confidence in the outdoors, and a deepened love for nature. [Click here to learn more and register.](#)

## **Project WET Gazette:**

### **Lessons on Drought, Climate, and Water Conservation**

#### **Activities to Explore Water Conservation and Take Action with Your Students**

Drought conditions continue through California and the West. The [Spring Gazette](#) highlights Project WET activities that explore water conservation while teaching skills learners of all ages can immediately use to conserve water and make our communities more climate resilient in the process. You can experience many of the activities highlighted in this Gazette by attending one of the online, hybrid or fully in-person **Project WET workshops** we have available this spring. Or join us for one of our multi-day summer [special events](#).

[Project WET](#) is celebrating World Water Day on March 22 with a special webpage of resources highlighting the role of groundwater, which is the 2022 World Water Day theme. The special webpage will be available through Earth Day.

Don't forget to check-out our [Water Education Foundation All Things Drought](#) page to keep up on real-time reservoir levels, special reports, a newsfeed of current developments on the drought as well as answers to common drought questions and tips for how you can save water at home.

## **Earth Month events in Windsor:**

### **Free Compost Giveaway - Keiser Park**

**Saturday, April 9**

**9:00-1:00 p.m.**

**700 Windsor River Road**

*Drive-Up Self-Serve: Bring your own shovels and buckets*

**Sponsors and Partners**

WeAct, Windsor Garden Club, Town of Windsor

[WeAct4Windsor.org](http://WeAct4Windsor.org)

**Earth Day at Robbins Park Food Forest**

**Saturday, April 16 1:00-3:00 p.m. 100 Billington Lane**

Walks, talks and hands on activities for children and adults!

**Sponsors and Partners**

Windsor Wellness Partnership, Town of Windsor, Windsor Garden Club

[WindsorWellness.org](http://WindsorWellness.org)

**\*\*Sunday, April 24<sup>th</sup> Earth Day Activities\*\***

**Town Green Community “Open” Garden**

**10:00-2:00 p.m. Windsor Road @ Joe Rodata Drive**

Stroll through the garden and enjoy healthy ecosystems that include fruits, vegetables, flowers, herbs, along with supporting the pollinators and wise use of water!

**Sponsors and Partners**

Windsor Garden Club, Town Green Community Garden Committee, Town of Windsor

[WindsorGardenClub.org](http://WindsorGardenClub.org)

**Windsor Farmers Market**

**9:30-12:30 p.m. Windsor Town Green**

Shop just across the Town Green for local produce and much, much more!

[WindsorFarmersMarket.com](http://WindsorFarmersMarket.com)

**Town of Windsor Trash Clean Up**

**1:00 – 3:00 p.m.** Please register at link below

<https://www.eventbrite.com/e/earth-day-trash-cleanup-town-of-windsor-ca-registration-288040556057>

**More Waste Reduction in Windsor:**

Cali Calmécac Language Academy, in Windsor, is working hard to increase recycling, divert organic waste, and minimize landfill. A lot of students volunteer to help daily. The Windsor Rotary Club, representing Waste Less Windsor, is making a series of 3 videos with activities that will be presented by Rotary members to promote responsible sorting of waste and recycling materials.

In addition to the Rotary members, the school’s head custodian, several teachers, and teachers and students from a program for adults with disabilities are involved, as has Sonoma County Resource Recovery.

This project helps the school comply with S.B. 1383, which requires schools to reduce waste going to landfills.

For information, contact James Brooks at [jbrooks@wusd.org](mailto:jbrooks@wusd.org)

## April Mystery of the Month: Take a Hike

Selected from [One Minute Mysteries: More Short Mysteries You Solve With Science!](#)

Take \$5 off this title this month only with code MMAPRIL at ScienceNaturally.com

### **Mystery**

The students were pleased with the weather on the day of their field trip. It had rained the previous day and night, but this morning it was only cool and cloudy as the kids walked to the Visitors' Center.

The class was learning about different ecosystems, and had taken a bus to a park with a meadow, a pond, and woods. They were divided into three groups to collect samples and take pictures. They had walkie-talkies to keep in touch because cell phones didn't work there.

One group walked down a long, steep path to Frog Pond with Mr. Wysor. Marcel and Tucker's group hiked across to the meadow with Ms. Smith, while the third group took on the task of studying the woods on a hillside with Mrs. Hammerick.

After an hour or so, Ms. Smith's group was finished. They walked back to the Visitors' Center, but neither of the other groups had returned. Ms. Smith asked Marcel to check on them.

"We're finished in the meadow and can leave any time. How are you guys doing? Over," he said into the walkie-talkie.

"We have our samples and are just taking the last of the pictures. We will start walking back in a couple of minutes. Over," a voice replied.

"We're getting samples, but it's so foggy here that the pictures won't be any good. Give us another 20 minutes. Maybe the fog will lift. Over," another voice responded.

"I didn't recognize those voices. Which group needs more time?" Tucker asked Marcel.

### **Solution**

"It must be Mr. Wysor's group at Frog Pond that isn't finished yet," Marcel said. "Fog is more likely to form in low, damp areas, such as around a pond, especially when the ground is soaked, like it would be from all that rain yesterday, and the air is cool. Fog occurs when air cannot hold all the water vapor it contains and the vapor condenses into water droplets. The group down at the pond must be the group that we are waiting for."

### **Mike's thoughts:**

1. There are several types of "fog". Have students compare and contrast them.
2. Students will know about observing "fog" when they exhale on a cold morning, and "fogging" a cold mirror or window. Have them investigate those phenomena and explain the science behind them.
3. Place some water and ice cubes, possibly with some salt, in a Solo or other plastic cup or a glass. Have the students observe the condensation of water on the outside of the cup/glass after several minutes, and have them explain the science behind condensation.
4. After students understand condensation, have them investigate:
  - rain formation
  - frost formation
  - sublimation
  - snow formation

# ***Leadership Institute for Just and Resilient Communities Fellowship Program*** **Nominations and Applications OPEN**

Are you, or someone you know, ready to join a community of change makers working for social and environmental justice? Then the [\*Leadership Institute for Just and Resilient Communities\*](#) program is for you!

**Early Bird applications close Tuesday, May 3 for our Fall Leadership Institute Class of 2023.**

The [Leadership Institute Fellowship Program](#) is a 10-month immersive training in Sonoma County that provides **exposure, skills and experience** to advance transformative change for our community and climate.

This program is for YOU if:

- you are passionate about helping your community and planet and **ready to grow your leadership skills** and network,
- your business, organization or group wants to **expand your reach and positive impact**,
- you are in government and looking to **deepen relationships in the community** to advance solutions together.

[Apply or Nominate Today!](#)

## **Information Session: Learn About Leadership**

**Wednesday, April 20th and Thursday, May 19th**

*7:00 pm - 8:00 pm PST | Online with Kerry Fugett and Isai Garcia*

Learn more about this program, our speakers and get your questions answered from this year's participants.



YES, save my spot for April 20!

YES, save my spot for May 19!

You Will Gain:

- **Exposure** to inspirational leaders working in the areas of Indigenous sovereignty, climate justice, equity and liberation, regenerative economies, civic engagement, food justice and water resilience.
- **Skills** to navigate stress and conflict, build relationships and collaborations, utilize trauma-informed community engagement practices, and integrate mindfulness practices.
- **Experience** designing equitable programs and processes.
- **An expanded network** of support across our 600+ alumni network.

We prioritize inclusivity and a learning cohort who represent the diversity of our population. We have a limited number of discounted tuitions available and are committed to working with all applicants who need to be represented to ensure that *cost is not a barrier to participation*.

The health of our people and planet depend on a cross-sector, collaborative approach to change. Thank you for being a part of that. **Nominate, or apply yourself, to join this expansive network of professionals working toward a just and resilient future.**

## Free New program for 3<sup>rd</sup>-5<sup>th</sup> Graders

The Sonoma and Gold Ridge Resource Conservation Districts are very excited to announce in-person 3rd and 4th grade field trips coming up in Spring 2022! The Teaching Agricultural and Environmental Memories (TEAM) Program is a unique environmental education program that helps 3<sup>rd</sup>-5<sup>th</sup> graders explore how working lands feed our community and protect our soil, water, and wildlife resources. A TEAM Program experience typically involves a field trip visit to a local farm and a visit to your classroom by TEAM educators both before and after the field trip. We also offer a virtual learning program for 3<sup>rd</sup>-5<sup>th</sup> grade.

We hope you will be interested in bringing your class to have an outdoor learning experience with us at a local farm this year! 5th grade classes: please stay tuned for announcements later this Fall 2022 when we will be planning field trips to the Open Field Farm learning site. There is no charge for TEAM field trips, made possible by Ag + Open Space and the Sonoma County quarter-cent sales tax. Bus stipends are available to reimburse Title 1 Schools' transportation costs. We will work to ensure each school district's COVID-19 policies are met on and off of campus.

If you have any questions, please don't hesitate to reach out directly to Shannon Drew, Program Assistant at [sdrew@sonomarc.org](mailto:sdrew@sonomarc.org). You can also visit us at [sonomarc.org/programs/education/team-program/](http://sonomarc.org/programs/education/team-program/) to stay updated on program happenings. We're here to support you and look forward to seeing you out on the farm later this spring!

## Exploring Fire Management in Sonoma Landscapes Using Project Learning Tree

*Curricula Resources: Grades 3rd -12th for Sonoma County Educators*

April 26 | 4:00 - 6:00 PM | Zoom

April 30 | 10:00 AM - 2:00 PM | In-person

This is a virtual and in person workshop for Sonoma County Educators. Attend one interactive zoom session Tuesday April 26 , 4:00-6:00 and one in person Saturday April 30. 10-2:00. Complete one asynchronous assignment compiling local fire related resources, subject standards, and PLT activities to share at the last session.

Participants of this workshop will:

- Learn how Project Learning Tree can engage students in outdoor field studies.
- Receive a Project Learning Tree Explore Your Environment: K-8 Activity or Secondary Module Focus on Forests and access to other online curriculum resources after completing the workshop
- Receive links to Redbud Resource Group's Healthy Ecosystems Feed Healthy Communities (Middle School) a local native curriculum project.
- Learn connections to NGSS (Next Generation Science Standards), other standards, and shifts in instructional practices
- Collaborate with other educators in sharing resources and presentations
- Be certified as a Project Learning Tree educator and gain access to online resources

Zoom link for virtual session provided after registration. In-person portion of the workshop will take place at Crane Creek Regional Park and will require a \$7.00 parking fee. COVID-19 safety measures will be taken for in-person session, please bring your own lunch, water and chair.

A fee of \$10.00 will be charged when ordering the guides from University of California, Agriculture and Natural Resources, CA Project Learning Tree.

### **Register with us here!**

Questions? Please contact:

Christine Kuehn | [ckuehn@sonomarc.org](mailto:ckuehn@sonomarc.org)  
Education and Communications Manager  
Sonoma RCD

*This workshop is hosted by Project Learning Tree of California and the Sonoma Resource Conservation District with support from the Community Foundation of Sonoma County.*

## **from Sonoma Water: Teacher Workshop-Climate Change & Resilience in the North Bay**

Middle and high school teachers are invited to apply to attend a paid, 5-day workshop with local organizations working to address climate change in Sonoma County. Field trips will explore topics ranging from fire ecology and land stewardship informed with Traditional Ecological Knowledge, to water resource security, impacts to coastal ecosystems, renewable energy and electrification, solutions-focused projects at school, and how to talk about climate change with students. Workshop dates are July 18-22, 2022, from 9:00 am to 5:00 pm. Each day includes an afternoon work block to develop lessons and curriculum. Outings will include the option to kayak or bird walk. For more information and to apply: [www.sonomawater.org/workshops](http://www.sonomawater.org/workshops). APPLICATION DEADLINE IS MAY 9<sup>th</sup>, 2022.

## JOBS:

### *Employment at Stewards of the Coast and Redwoods*

#### Stewards is hiring!

Have you ever dreamed of a job working in Armstrong Redwoods? We are now recruiting for two positions: **Program Manager and Volunteer Coordinator**. [See our website for Jobs Available](#) with Stewards of the Coast and Redwoods. Part-time and/or Full-time, paid positions are available.

#### **Volunteer Coordinator (Part or Full time):**

Work with dedicated volunteers to support Stewards programs.

[Job Description \(link\)](#)

<https://stewardscr.org/wp-content/uploads/2020/11/2022-Volunteer-Coordinator-Position-1.pdf>

## Sonoma Land Trust

The Sonoma Land Trust (SLT), a nationally recognized and award-winning land conservation organization based in Sonoma County, is hiring a **Director of Marketing and Media Relations** to lead organizational marketing, communications and media relations strategies.

Find out more about the Director of Marketing and Media Relations position [HERE](#)

This position reports directly to the Executive Director and works as part of a highly collaborative and innovative team to protect vital ecosystems and habitats, build climate resilience to fire and floods, and promote equitable community benefits for all people in the North Bay area. The Director of Marketing and Media Relations will join our organization at a critical period for environmental protection and will help position SLT as a leader in climate action and environmental justice.

- Learn more about Sonoma Land Trust [HERE](#)
- Read our latest impact report [HERE](#)
- Check out our commitment to Diversity, Equity, and Inclusion [HERE](#)

Applications reviewed on a rolling basis. To apply, please send resume and cover letter to [staffing@sonomalandtrust.org](mailto:staffing@sonomalandtrust.org)

# Friends of the Petaluma River Environmental Education Coordinator

We are looking for an Environmental Education Coordinator to support nature-based programming for youth in both the classroom and in the field. The ideal candidate is fun-loving, has lots of energy, is knowledgeable about local ecology, has experience working with youth and is committed to supporting the local environment. Our Educators provide students and campers with a safe, positive, fun atmosphere, encouraging them as they become confident and comfortable in nature. The Coordinator creates and implements curriculum for our weekly after-school program, Nature Immersion and summer camps in a 100% outdoor environment and supports the creation of resources for our Watershed Classroom program. The ideal candidate is self-aware, motivated and works great as part of a team

COMPENSATION - \$52k-\$57k/ Annually - This is a salaried position with two weeks paid vacation time

APPLICATION PROCEDURES - Email resume, cover letter & 3 references to [stephanie@friendsofthepetalumariver.org](mailto:stephanie@friendsofthepetalumariver.org)

## DIG INTO NATURE

with the Center for Environmental Inquiry

**Environmental readiness for all**

Visit our [preserves](#) to learn new skills in the arts and sciences, or attend [virtual](#) workshops that bring nature to you. Learn how to get environmentally ready with local experts and educators, as well as those across the country.

## Sign Up for Spring 2022 Events

### Natural History Hikes

[Every Saturday, April 2nd - May 7th | 10:00 a.m. - 2:00 p.m.](#)

**Leaders:** SSU Students and Community Naturalists

**Location:** Osborn Preserve

### Being with Bears

Deep Dive

[Monday, April 11th | 12:00 p.m. - 1:00 p.m.](#)

**Leader:** Megan Walla-Murphy, Adjunct Faculty, Santa Rosa Junior College, and Instructor, UC California Naturalist Program

**Location:** Online

### Embers of Awakening: Film & Chat **(added since March)**

April 20th from 4-6:30pm

On the SSU Campus

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

## **Naturalist Ed Series:**

### **Connecting to Nature Through Story (added since March)**

April 28th from 3-6pm

At Fairfield Osborn Preserve

<https://cei.sonoma.edu/NES-Story>

## **Osborn Sudden Oak Death Blitz - Bilingüe en español**

[Saturday, April 30th / sábado, 30 de abril | 2:00 p.m. - 5:00 p.m.](#)

**Leaders / Líderes:** SOD Specialists, UC Master Gardener Program of Sonoma County

**Location / Ubicación:** Osborn Preserve

## **Galbreath Sudden Oak Death Blitz**

[Sunday, May 1st | 9:00 a.m. - 1:00 p.m.](#)

**Leader:** Alan Chesterman, SOD Specialist, UC Master Gardener Program of Sonoma County

**Location:** Galbreath Preserve

## **Young Women in Herpetology**

[Friday, May 6th | 10:00 a.m. - 2:00 p.m.](#)

**Leaders:** Victoria Brunal, Graduate Student & Student Naturalist Program Coordinator, Sonoma State University; Isabelle Barnes, Animal Care Technician & Educator, Petaluma Wildlife Museum

**Location:** Galbreath Preserve

## **Múltiples rostros de la conservación**

[jueves, 12 de mayo | 12:00 p.m. - 1:00 p.m.](#)

**Líderes:** Los líderes de opinión de nuestro campus y la comunidad se unen para tomar medidas

**Ubicación:** En línea

## **Summer Writing Walk**

[Sunday, May 15th | 10:00 a.m. - 2:00 p.m.](#)

**Leader:** Lakin Kahn, retired English Lecturer, Sonoma State University

**Location:** Galbreath Wildlands Preserve

## **(Re)wilding Honeybees**

[Sunday, May 22nd | 9:30 a.m. - 1:00 p.m.](#)

**Leader:** Michael Thiele, Founder and President, Apis Arborea

**Location:** Galbreath Preserve

## From the Forestry Challenge Teacher Newsletter:

**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](mailto:forestryinstitute@gmail.com) for more information

Tuolumne, June 19-25 Sierra Outdoor School, Sonora  
Shasta, July 3-9 Camp McCumber, Shingletown  
Humboldt, July 10-16 Humboldt State University, Arcata

## Registration Now Open!

### TeenTechSF STEM Inclusivity Forum Apr 9 & Weekly Spring Workshops!

2022 TeenTechSF STEM Inclusivity Forum  
"Diversity in Tech: Bridging the Gap"  
REGISTER NOW for Apr 9 [TeenTechSF STEM Inclusivity Forum!](#)

## IGNITE Virtual Panel with REI Co-op

[Thursday, Apr. 14, 2022](#)  
[Pick Your Own Time!](#)

Come chat with the women of REI! We are excited to discuss our journey into the world of STEM jobs. Students will learn about the technology that makes this celebrated brand run and engage in a live Q&A with the panelists.

This panel is open to middle school, high school, and college students. The first teacher to sign up will submit their preferred time.

[Sign Up for Virtual Panel with REI Co-op](#)

[Sign Up Here!](#) [No College Required: Nontraditional STEM Journeys Virtual Panel with Year Up](#)

## [Puget Sound \(High School\)](#)

Tuesday, Apr. 19, 2022

[Pick Your Own Time!](#)

Join women in STEM who are Year Up Puget Sound interns and alumnae working at companies like Amazon, Facebook, Microsoft, Expedia, and Wells Fargo! Learn about the Year Up paid internship program and nontraditional journeys to STEM careers, including career paths that don't require a college degree. Students will have a chance to engage in a live question and answer session with the panelists.

## Exploratorium

We are currently accepting applications in the High School Explainer program for the Summer 2022 session. You can find the application [here](#). Please share with students and youth in your network who may be interested.

The Summer session will run from **June 18th-September 10th, 2022**. Youth must be able to attend all mandatory training on **May 28, May 29, June 4th, and June 5th** to be considered. (exceptions can be made if there is a valid reason if they can not make 1 of the trainings)

This is a paid position \$17.34/hr.

To be eligible:

- Candidates must be high school aged students (including students in traditional and alternate post-high school programs – between the ages of 15 and 18 for first time Explainers, and up to the age of 20 for returning Explainers.)
- Must be able to obtain a valid work permit.
- Must be able to attend all basic training dates
- 

## SPINWIP

The Stanford Program for Inspiring the Next Generation of Women in Physics (SPINWIP) is a virtual summer outreach program hosted by the Stanford Physics Department, designed to get high-school girls excited about physics. This 3-week program is completely free to participants, and is held through video chat. First-generation students and students from underrepresented backgrounds in physics are particularly encouraged to apply. No prior knowledge of physics or coding is needed.

Students will learn about cutting-edge research in physics in fields such as quantum physics, quantum computing, astrophysics, and cosmology. They will also learn how to code in Python, and then apply their coding skills to physics-based projects. Students will attend lectures by Stanford professors and researchers and work in small groups led by Stanford undergraduates, as well as attend college planning and career development workshops. Students will have the opportunity to form mentorship relationships with Stanford students and professors.

**Dates:** July 11th-29th, Monday through Friday.

**Time:** 9am - 1pm PDT (PDT is UTC -08:00). Exact schedule will vary day-to-day.

**Eligibility:** High-school students. Students from countries outside the US are welcome to apply. Preference will be given to first-generation students, and students from underrepresented backgrounds in physics, as

well as rising juniors. While this program is geared towards women in physics, students of all genders and gender identities are welcome to apply.

**Apply at:** [https://bit.ly/SPINWIP\\_2022](https://bit.ly/SPINWIP_2022).

Applications for Summer 2022 will be accepted until **May 9th, 11:59pm PDT**.

**Contact us:** spinwip\_info@stanford.edu for program-related inquiries.

## Some interesting reading:

The April issue of **National Geographic** includes articles on:

- “A way for Nature to Rest in Peace” (cemeteries as land preserves)
- “Where the Walruses Sing”
- Cover article: “Rainforest Tepuis” (evolution studies on a peak high above the Amazon)
- “The Weird Wonder of Seahorses”
- “Plastic Runs Through It” (plastic waste in the Ganges River)
- “All for a Song” (the trade in wild songbirds in Cuba)
- “The Water Behind Us” (fishing tradition in West Africa)

The April issue of **Smithsonian** magazine includes articles titled:

- xxx

The Spring issue of **Sierra** (the magazine of the Sierra Club) includes articles on:

- Rewilding Iowa
- Efforts to reduce fossil fuel use in Africa
- Black history in our National Parks
- Decolonizing Official Place Names
- How to (Really) Bid Good Riddance to Plastic
- and some great close-up photos of insects!

I received a free sample promotional issue of **New Scientist**. I bet that they would send you one if you contacted them. The Spring, 2022 contains articles on:

- a cave in France that was alternately inhabited by Neanderthals and modern people
- “Spiderwebs may be the world’s most sensitive ‘ears’ “
- The Race to Capture Carbon
- self-driving vehicles
- bioluminescent fungi
- “Sharing the seas”: who owns the oceans?
- “The Dawn of a new physics?”
- “Taming migraine” headaches



## 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:

- "CSI" techniques reveal carnivorous plants' lunch
- Rising temperatures shift egg laying season up a month
- Study analyzes effects of drinking fermented beverage with probiotics
- Study: Kids with obesity get brain boost from exercise
- Earth's core leaks helium, study suggests
- Researchers may have spotted rare intergalactic supernova
- Flower's hidden UV chemicals help lure pollinators
- Owl fossil sheds light on daytime hunting habits
- Years of sediment data show Vikings fled drought
- Study: Bigger urban parks make people happier
- Caffeine may help reduce some ADHD symptoms

### **TED Talks: Science Worth Knowing:**

New science-related talks are frequently posted.

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

## 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 April 4 edition included:**

- Revolutionary DNA nanotechnology speeds up development of vaccines by more than one million times.
- Vitamin C supplements could help reduce toxic side effects of common cancer treatment
- Gain muscle mass and lose fat: Can weekly prednisone treat obesity
- Levels of a hormone could predict or detect bone loss in premenopausal women
- Artificial sweeteners may not be safe sugar substitutes

### **Cool (Hot?) Link**

Here's a link to the Northern California Project Learning Tree newsletter:

[https://webmail.sonic.net/?\\_task=mail&\\_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&uid=46245&mbox=INBOX&action=show](https://webmail.sonic.net/?_task=mail&_caps=pdf%3D1%2Cflash%3D0%2Ctiff%3D0%2Cwebp%3D1&uid=46245&mbox=INBOX&action=show)

## *Live and Learn*

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

I am fortunate in that I rarely have headaches, and when I do, they are mild and usually associated with lack of sleep. I've heard of migraines, but never experienced one. The migraine article in the *New Scientist* magazine mentioned above was interesting. I have always thought that they were just severe headaches. It turns out that they are more complicated than that.

Not only do they hurt, but someone experiencing one may not be able to speak or see.

- They can last for days.
- They are often preceded by mood changes, neck stiffness, yawning, or a vague feeling that something bad is about to happen.
- Sometimes people feel tired or unwell for days after the headache subsides.
- The exact cause is unknown, but scientists seem to be getting closer to both understanding the cause(s) and finding treatments.

And...Those little plastic labels on individual pieces of produce are a pain, right? They are a waste of plastic, a bother to remove, and contaminate either landfills or compost piles. The April issue of *National Geographic* has a (very) short article about a Dutch produce distributor that has developed a method of using lasers to essentially "brand" the produce with the information. Of course, there's no free lunch...the lasers use energy, and while it might be useful on thick- or tough- skinned fruit like pomegranates, oranges, or watermelons, I doubt that it would work on tomatoes or apples. But still...

## **Science Humor:**

When my parents told me that the world didn't revolve around me I thought that maybe I wasn't their sun after all.

and...

What doesn't kill you will mutate and try again!

## **Science and Economic Buzz Café**

### **HopMonk Tavern and Grill**

**Sebastopol, CA**

**Host, Daniel Osmer (daniel@economicbuzzcafe.com)**

**Come Early for Food & Drink • RSVP \$7 • Door \$10**

<b>APRIL 6th</b>	<b>ABBEY</b>	<b>Richard Ely, Geology Dude</b>	<b># 493</b>
<b>Wednesday 7PM</b>		<b>National Parks of the Colorado Plateau</b>	
<b>MAY 4th</b>	<b>ABBEY</b>	<b>Julie Bennett, Author</b>	<b># 494</b>
<b>Wednesday 7PM</b>		<b>The Phoenix Man</b>	
<b>JUNE 1st</b>	<b>ABBEY</b>	<b>Dr. Allan Bernstein, Neurologist</b>	<b># 495</b>
<b>Wednesday 7PM</b>		<b>The Biology of Memory: What Could Possibly Go Wrong?</b>	

JULY 6th  
Wednesday 7PM

ABBEY Brodie Auld, PT, CFP  
Doing Less Than You Can to do More Than You Thought!

# 496

**BRINGING SCIENCE, ECONOMICS & CURIOSITY BACK INTO CULTURE ...**

**(707) 292-5281**

[daniel@economicbuzzcafe.com](mailto:daniel@economicbuzzcafe.com)

**Discover the Scientist Within and Widen Your Horizon!**

## **SAVE THE DATE**

### **Kids to Parks Day is Saturday, May 21, 2022**

**What is Kids to Parks Day?**

**Kids to Parks Day** is a national day of outdoor play **celebrated annually on the third Saturday of May**. The day connects kids and families with their local, state, and national parks and public lands. **Celebrating our 12th year**, Kids to Parks Day is **back in full swing in 2022** with **in-person events, outdoor celebrations**, as well as a **family-friendly social media campaign**.

## **The Project WET Winter Newsletter is out! (Water Education for Teachers)**

### **California Project WET Gazette — Water, Infrastructure & Climate** **Activities to Explore Water Infrastructure & Climate Resilience with Your Students**

Extremes in all manner of our lives have marked the past several years and those caused by weather driven by a changing climate are among the most concerning.

The [Winter Gazette](#) highlights Project WET activities that explore water infrastructure – human engineered and natural systems – and the role that infrastructure can play in making our communities and state more climate resilient.

Keep an eye out for **Project WET [workshops](#)** and **[special events](#)** as we move through winter into spring. We are watching the COVID-19 virus conditions like everyone else and will be offering virtual workshops this winter with plans for hybrid and full in person experiences as soon as it is safe to do so again.

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

Four event locations, one nearby, three others farther away:

### **\*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. Forms submitted before June 30 may qualify your group for a registration fee discount, and 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.

From the Forestry Challenge Teacher Newsletter:

## **What is Drought and What Can You Do About It?**

Our Building Climate Literacy PD series continues this spring.

Join CRS and EBMUD on

**Thursday, April 28, 2022 4:00 To 5:00 PM** to find out...

What is a Drought and What Can You Do About It?

This webinar will provide teachers with tools and information to talk to their students about drought and climate change as it relates to water conservation. The state of California is in its third year of drought, and the East Bay Municipal Utility District (EBMUD) is asking its customers for a ten percent reduction in water use District-wide. Alice Towey, Manager of Water Conservation at EBMUD, will provide an overview of EBMUD's water supply and drought response. She will then present a slide deck developed by EBMUD with engaging activities that meet the NGSS requirements that teachers can use in the classroom setting to help students think about water and drought.

[Register Today!](#)

# Ignite Ed Summer Fellowship Program

## *Powerful professional development*

- Ignited matches you with a [leading company, university research lab, or nonprofit](#) of your choice to work on a meaningful [summer project](#).
- You'll get eight weeks of paid work during the summer, working directly with teams at the organization.
  - Each summer project provides a hands-on experience, with support from a Project Leader and a personal Ignited Coach. Experiences can be virtual or in-person.
- You'll develop new skills, get valuable experiences, and have the opportunity to create tailored lessons to bring back to your classroom.
- Relationships with your Project Leader and their teams can continue after the summer. You can invite them to work with you in your classroom or at your school.

Teachers can earn up to \$9,000 for working at companies like Genentech and universities like Stanford, while working with a Coach to bring their learnings back to the classroom. This summer, we'll have quite a number of positions at Facebook, and a few exciting brand-new host organizations as well!

If you have any questions, please don't hesitate to reach out - [edilger@igniteducation.org](mailto:edilger@igniteducation.org)

### 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): <http://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](http://www.sonomacountygazette.com)
- the *Parents' Press* ([parentspress.com](http://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 [dianedealeynell@gmail.com](mailto:dianedealeynell@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](mailto: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](http://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](http://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](http://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](http://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](http://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](http://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](http://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, but 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](http://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](mailto: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.marinmammalcenter.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://naee.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 Tamalpias 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](mailto: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](http://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/](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](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/california-project-wet-gazette). 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](http://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](http://www.sciencebuzzcafe.org) (707) 292-5281 [daniel@sciencebuzzcafe.org](mailto: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](http://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](http://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](http://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](mailto: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](http://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](https://cei.sonoma.edu/calendar)
- Recordings of past events: [cei.sonoma.edu/calendar/past](https://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](http://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](http://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](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](mailto:sastra.mcginley@wildlife.ca.gov) or (707) 280-3084 or visit [www.wildlife.ca.gov/Regions/3/HEP](http://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](#)

} I wrote these three.

[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](#)

[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](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 [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](mailto: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](mailto: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](http://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](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](http://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://cemarlin.ucanr.edu/Programs/Custom\\_Program816/Environmental\\_education\\_resources/](http://cemarlin.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](mailto: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](mailto: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](http://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.kwmmr.org](http://www.kwmmr.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](http://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](mailto:programs@planetbee.org) if you have any questions, or sign up for programs via the online registration forms on our website, [www.planetbee.org](http://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](mailto:education@scwildliferescue.org).

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

For information, contact Linnaea Furling at: [education@scwildliferescue.org](mailto: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](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%20and%20blast)

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](mailto: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.'