



# Hydro Herald News

Winter 2013

*A Newsletter for Teachers*

## Sonoma County Water Agency's Water Education Program

Greeting Educators!

We hope you will look to our Water Education Program as a resource for your classroom, whether it is free curricula, supplemental materials, or direct instruction. We want to support you in teaching your students about one of the Earth's most precious resources - **water!** Each year, we reach thousands of students and teachers through our lessons and materials. One component of our program is this newsletter written for local teachers highlighting educational opportunities and resources in the area.

Our Water Education Program is designed to teach students the value of water as an important natural resource, with a focus on personal responsibility for water conservation and the practice of environmental stewardship of our local watersheds. The program incorporates contests, teacher workshops, assemblies, student incentives, curriculum materials, classroom presentations, and field trips – all of which are **free** to schools within our service area in Sonoma and Northern Marin counties. All curricula and instruction supports the California Curriculum Frameworks and are aligned with California State Science Standards for grades K – 12. For more information visit us on the web at [www.sonomacountywater.org/education](http://www.sonomacountywater.org/education).



Published by the Sonoma County Water Agency

# FREE Classroom Materials!

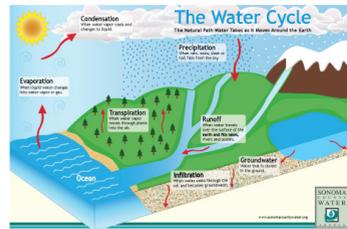
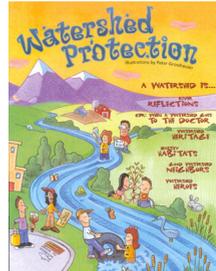
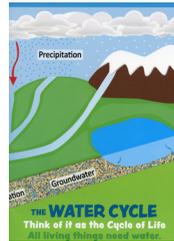
The Sonoma County Water Agency offers free water science education materials to teachers that fall within our service area in Sonoma and Northern Marin counties. Materials are available for grades K-12 and have been carefully developed to support the California State Frameworks and are aligned with the California Science Standards.

Materials include:

- maps & posters
- student workbooks
- teacher guides
- student incentives

Orders are filled within two weeks of receipt and will be mailed to your school.

Order Online!



[www.scwa.ca.gov/education](http://www.scwa.ca.gov/education)

- Completely FREE!
- User friendly format
- View all our available materials online
- View sample pages of workbooks
- Many materials have information about local water resources
- Shipped directly to your school

SONOMA COUNTY WATER AGENCY

Securing our Future by Investing in our Water Resources, Environment & Community

ABOUT US | NEWS | OUTREACH | CONSERVATION | ENVIRONMENT | CAREERS | PROJECTS / EIRs

What's New  
Sonoma Clean Power  
View School water rates counts  
Local Hazard Mitigation Plan Update  
Water Fish Lander and Fish Screen Installation Project  
Sonoma County Efficiency Partnership  
Biological Opinion (BFO) Meeting Dec. 20

WATER SUPPLY | CARBON FREE WATER | FLOOD PROTECTION | SANITATION

Home > Water Education Program > Materials

Materials

Materials are only available to teachers that fall within our service area in Sonoma and Northern Marin counties in California, as these water providers fund the Water Education Program.

Orders are filled within two weeks of receipt and will be mailed to your school. They are available for all grade levels and have been carefully developed to support the existing California State Frameworks and are aligned with the new California Science Standards.

Download 2012-2013 Brochure

Teacher's First and Last Name  
Grade Level  
School Name  
School District  
Street Address (do not use P.O. Box)  
City: Boyes Hot Springs, CA  
Zip Code  
Telephone  
Email

SONOMA COUNTY WATER AGENCY

# Have you used our Lending Library?

## What is the Lending Library?

The Lending Library loans water science books, videos, class sets of student guides, and models to educators within our service area.

## How long can I borrow the materials?

All materials are loaned for a two week period.

## How do I get the materials?

- Come in and browse the library in our administration office located at 404 Aviation Blvd. (off Airport Boulevard in Santa Rosa)
- View materials online and submit a request at [www.scwa.ca.gov/education](http://www.scwa.ca.gov/education). Not sure what you want? Tell us what topic or field you're interested in and we'll put it together for you. Call Kory at (707) 521-6204.
- Videos and books can be mailed to you or you can pick them up at 404 Aviation Blvd. Models must be picked up.

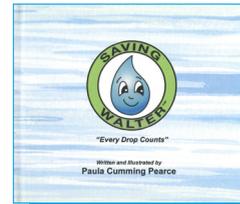


This year we have many new environmental science books and activity guides.

## Saving Walter "Every Drop Counts"

Author and Illustrator: Paula Cumming Pearce

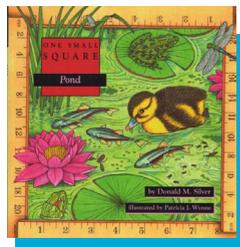
Follow "Walter" the water drop as he is taken on an adventure moving through each phase of the water cycle. Watch him as he transforms between vapor and liquid and eventually groundwater. Readers learn how groundwater becomes the same water we get from our faucets. They also learn the importance of water conservation and techniques to help them save water through this artfully illustrated, locally made book. Written for children ages 4-10.



## ONE SMALL SQUARE Pond

Author: Donald M. Silver Illustrated by Patricia J. Wynne

This activity filled book encourages children, age 7 and up, to find a special square of a pond nearby and outlines inquiry based activities that encourage discovery at this special place throughout the seasons of the year. This book is filled with scientific information, pond life activities, identification of visible to microscopic pond animals, and is sure to be a classroom favorite. Some activities include creating a pond journal, making a Wood Duck box, life under a pond leaf investigation, building a pond life viewer and more activities that promote aquatic pond life investigations.



## Enviroscape Interactive Model

*We all live in a watershed!*

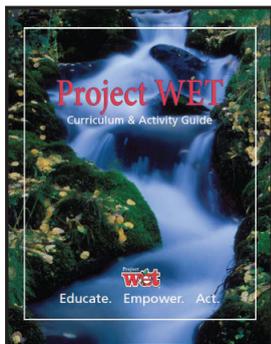
This model helps students understand the sources and prevention of water pollution through a visual, hands-on interaction. It demonstrates the origin of both point and nonpoint source pollution and how watersheds work. It makes these abstract concepts easy to understand so students learn how to prevent water pollution in their communities. Easy to setup and clean!





# Project WET Workshop

Recommended for K-12 educators



The NEW Project WET is here! This full-color, fully revised 592-page guide contains 64 multidisciplinary water-related activities for students from Kindergarten through 12th grade. The guide features cross-reference and planning charts, a glossary and background material on activity development and field testing. The cornerstone of Project WET is its methodology of teaching about water resources through hands-on, investigative, easy-to-use activities.

We have tailored the workshop to our region with activities that highlight local water issues and concerns. Project WET is correlated to California State Standards as well as the EEI (Education and the Environment Initiative)

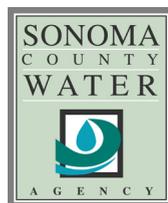
Standards and can be used when teaching science, math, language arts, social studies and environmental studies. All participants will receive a Project WET curriculum guide. Teachers can earn (.6) CEU credit for attending this workshop.

**When:** Saturday February 2, 2013  
**Time:** 9:30 – 3:30  
*(Lunch and snacks will be provided.)*  
**Location:** Sonoma County Water Agency  
 Russian River Field Study Site  
 9750 Wohler Road, Forestville

The fee for this workshop is \$15.00. Please send a check to:  
**Sonoma County Water Agency**  
 404 Aviation Blvd.  
 Santa Rosa, CA 95403  
 Attention: Water Education Program

Register online: [www.sonomacountywater.org](http://www.sonomacountywater.org)

Once we receive your registration, a confirmation and location map will be mailed to you. Questions? Please call the Water Education Program at (707) 521-6211



# Aquatic WILD & WILD About Trout Enrichment Workshop

Enhance Your Student's Experience Hatching Fish in the Classroom

This workshop is specifically geared for Sonoma and Marin county teachers currently involved in a Trout in the Classroom or Steelhead in the Classroom program.

Your instructional team will include:

- Sonoma County Water Agency Water Education Staff
- Ed Huff, Mission Peak Fly Anglers
- Bob Flasher and Ethan Rotman, CA Fish and Game

All workshop attendees will receive:

- A copy of the new WILD About Trout multi-media program
- Project WILD Aquatic curriculum guide
- Participate in five Project WILD Aquatic activities
- Share ideas with other teachers hatching fish in their classrooms

**Saturday March 2, 2013**  
 9:30 -2:30  
 Sonoma County Water Agency  
 404 Aviation Blvd.  
 Santa Rosa, CA 95403

**Workshop Fee:**  
 \$20.00  
 Lunch and snacks will be provided.

Join us for a *fun* day of learning and sharing.

To sign up for this workshop:  
[www.wildabouttrout.eventbrite.com](http://www.wildabouttrout.eventbrite.com)

For more information contact:

Ethan Rotman [erotman@dfg.ca.gov](mailto:erotman@dfg.ca.gov) or at (415) 999-5924  
 or  
 Cary Olin [cbo@scwa.ca.gov](mailto:cbo@scwa.ca.gov) or at (707) 521-6211



# Direct Instruction:

## 5th Grade: Field Study Program

### *How Do We Get Our Drinking Water?*

In the 2011/2012 school year, 83 classes participated in our free 5th grade field trip program. Want to be one of those classes? Register today at:

[www.scwa.ca.gov/lower.php?url=instruction](http://www.scwa.ca.gov/lower.php?url=instruction)

Bring your class out to the Russian River and our groundwater pumping facilities to experience firsthand the source of our drinking water. The program consists of a **one hour pre-site visit** to your classroom by Water Agency staff and a follow-up **field trip to the Russian River**.

The focus of this program is to have your students:

- See the Sonoma County Water Agency's water transmission system
- Conduct water quality testing
- Learn about the natural history of salmon and steelhead in the Russian River watershed

Students practice their lab skills by collecting water samples and performing hands-on water quality testing. They use microscopes to observe the variety of aquatic macroinvertebrates that provide food for larger creatures throughout the river ecosystem. **FREE** buses are provided for the field trip. We can accommodate up to two classrooms at our field site per day. This program is available during the months of September, October, November, March, April and May.



## 3rd Grade: Classroom Instructional Series

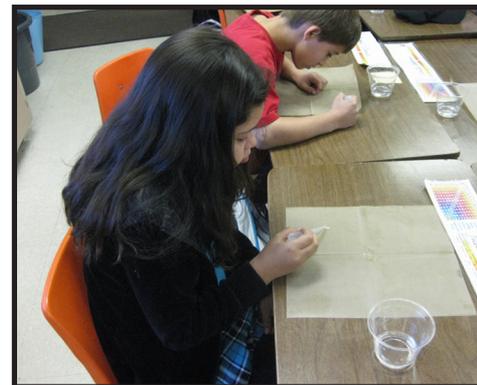
In the 2011/2012 school year, the Water Agency was able to provide direct instruction to 99 third grade classrooms. This program provides two, 60-minute lessons conducted by Water Agency staff in your classroom. Through hands-on experiments and discussions, students explore how their habits affect their water supply source.

This program is available during the months of December, January, February and early March. We are able to visit three classrooms at a school per day. Please coordinate with other teachers at your site before filling out the request form found at [sonomcountywater.org](http://sonomcountywater.org). This classroom series supports the California Science Standards.



### Lesson 1 Teaching Objectives:

- Water is a limited resource
- There is no new water
- Water has three forms: solid, liquid, and gas
- Heat causes water to change form
- The water cycle: process and vocabulary
- Water wasters versus water savers
- Strategies for conserving water



### Lesson 2 Teaching Objectives:

- Surface tension is an important characteristic of water
- Human actions can harm other living organisms
- Water that goes down a storm drain flows directly into our waterways without being cleaned
- The difference between storm drains and sanitary sewer systems

## Direct Instruction:

### New Job Shadow Program for area High School Students interested in Water Industry Jobs

The Sonoma County Water Agency has launched a Job Shadow program that is available to area high school students. This program is designed to expose students to careers in the Water and Wastewater Industry and to give students an awareness of academic, technical and personal skills required for these types of careers. The Water Agency has close to 200 full time employees and students and employees are matched, based on the student's career interests. The student has the opportunity to spend an afternoon getting first-hand experience in the field and has a chance to ask questions about the specific job and educational requirements. Information on this new Job Shadow Program can be found at the Sonoma County Water Agency's website (Click on Careers/Job Shadow Program). For more information please contact Stefan Klakovich at 547-1930 with questions.



### Join Us in Keeping Our Creeks Healthy and Clean

Earn community service hours by restoring local creeks and improving the habitat for salmon and steelhead trout in local streams and waterways. The Water Agency holds community service days each school year where students can plant trees, remove invasive species and clean up trash. It is a great way for students to earn community service hours, learn a bit about creek ecology and have some fun at the same time.

Upcoming community service days are planned for:

- Saturday January 12, 2013
- Saturday February 2, 2013
- Saturday March 9, 2013

Please contact Stefan Klakovich at 547-1930 for additional information.



# Salmon in the Russian River



## After School Program

Sonoma County Water Agency

This exciting hands-on program teaches students about endangered Russian River salmon. Students are transformed into migrating salmon as they "swim" through an outdoor obstacle course (when weather permits). On rainy days, an indoor space is needed for a salmon activity and game.

This program....

- is available on Monday afternoons only
- lessons are one hour in length
- appropriate for students in 1<sup>st</sup>-6<sup>th</sup> grade
- can accommodate 15-30 students per lesson
- 2 lessons can be scheduled in one afternoon

Schedule your visit today!

[www.sonomacountywater.org](http://www.sonomacountywater.org)

Kory Hebner:

(707) 521-6204

[Kory.Hebner@scwa.ca.gov](mailto:Kory.Hebner@scwa.ca.gov)



Make Your Car Spotless Without Being Thoughtless!



## Russian River Watershed Association 2013 Water Awareness High School Video Contest

### Who May Enter:

Students in grades 9 -12 attending high school in Sonoma, southern Mendocino, or northern Marin counties. Entries can be a team or individual effort. Limit one entry per person.

### Entry Guidelines:

- Each entry must be submitted on two standard DVD's:
  1. Playable DVD with no Menus
  2. Movie file (Prefer: .mpg .wmv .avi)
- Must be between 30 seconds and 1 minute in length
- No professional assistance or use of copyright material is allowed. (Such use will result in an automatic disqualification.)

### Entry Form:

A completed entry form must be turned in for each student with each video. Please label DVD's with the names of those submitting the video, high school name and phone number.

### Judging Criteria:

- Entries will be judged by an independent review committee using the following criteria:
- Incorporation of "Make Your Car Spotless without Being Thoughtless" message
  - Composition (length, technical construction, audio quality)
  - Entertainment value
  - Accuracy of information
  - Creativity - originality

### Submission Deadline is Friday March 15, 2013

Must be postmarked or delivered by 5:00 pm to Kory Hebner at the Sonoma County Water Agency  
404 Aviation Boulevard, Santa Rosa, CA 95403  
Questions? Call Kory at 707- 521-6204.

#### Cash awards:

1st place \$1500  
2nd Place \$1000  
3rd place \$500

Cash awards will be split with 50% of the prize money going to the individual(s) who submitted the video and 50% to the high school they attend. An awards presentation will be held in late April.

The Russian River Watershed Association is an association of nine cities, counties and special districts in the Russian River Watershed that have come together to coordinate regional programs for clean water, fisheries restoration and watershed enhancement. The Russian River Watershed Association includes the cities of Cloverdale, Cotati, Healdsburg, Rohnert Park, Santa Rosa and Ukiah; the Town of Windsor; the County of Sonoma; and the Sonoma County Water Agency.



## May is Water Awareness Month

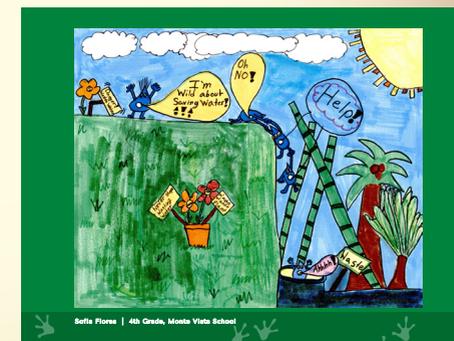
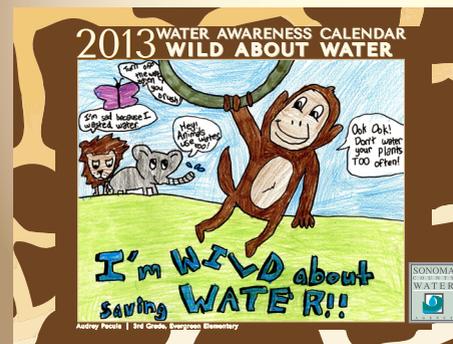
The Sonoma County Water Agency and local water suppliers will be holding our annual poster contest to celebrate.



2013 poster contest theme to be announced soon!

## 2013 Water Awareness Calendars are here!

If you didn't receive your 2013 calendar or need additional copies, please call  
**(707) 547-1916.**



Don't let your bubbles create environmental troubles!

# Has ZunZun visited your school?

ZunZun is a performing arts group that celebrates the environment and cultures of the Americas through music. Since 1992 the husband and wife duo, Stephen Synder and Gwynne Synder Cropsey, have performed in 14 countries throughout the America's and appeared on regional, national, and international radio and television. They perform for over 100,000 people annually. Their humor, vitality, and commitment to audience participation make all of their shows vibrant and lively. Their shows utilize a wide variety of folkloric instruments and are always participatory, multilingual (Spanish, Portuguese, English) and energetic.



## ♪ Free Water Music Assembly ♪



ZunZun is bringing their Musical Watershed Assembly to schools in Sonoma and Marin Counties. This 45-minute assembly engages students with musical segments focused on sustainability, water pollution, recycling, watershed ecology, storm drain run-off, sanitary sewer systems, and water conservation. Students are made aware of how their actions impact the watershed around them and what they can do to help preserve and protect it. Students and teachers are active participants in the program getting up on stage, singing, dancing, and playing a variety of folkloric instruments.

This year is the fourth year the Water Agency has been able to sponsor schoolwide assemblies by this amazing musical group.

This assembly program is FREE to participating schools. To sign up please call ZunZun directly at: (831) 426-0684 or contact them by email at: [zunzun@zunzuntunes.com](mailto:zunzun@zunzuntunes.com)



## Discovery Corner: Activity for Your Classroom

### Borax Crystals

#### Materials:

- Beaker or a wide-mouth jar
- String
- Colorful pipe cleaners
- Pencil
- Boiling water
- Borax (20 Mule Team Borax Laundry Booster)



#### Directions:

1. Cut and bend pipe cleaners into desired shape. It should easily fit into the jar you have with a least 1/2 inch of space all around. Pipe cleaners form a base for the crystals to grow in.
2. Now, attach string to the top of one of the pipe cleaners and tie the other end to a pencil (this is to hang it from). Remember that the crystals will also form on the string, so place it somewhere that it will still look nice.
3. Fill a wide-mouth jar with boiling water. (measure how much you put in!)
4. Mix borax into the water one tablespoon at a time. Use three tablespoons of borax per cup of water.
5. Stir until dissolved, (don't worry if there is powder settling on the bottom of the jar).
6. Insert your pipe cleaner shape into the jar so that the pencil is resting on the lip of the jar and the pipe cleaner snowflake is freely suspended in the borax solution. It should be completely submerged and not touch the sides or bottom.
7. Wait overnight and by morning the pipe cleaner will be covered with shiny crystals.
8. Hang in a window as a sun-catcher or use as a decoration.



#### The Science Behind the Fun

Borax is an example of crystal - "a solid with flat sides and a symmetrical shape because its molecules are arranged in a unique, repeating pattern."

Every crystal has a repeating pattern based on it's unique shape. They may be big or little, but they all have the same "shape". Salt, sugar, and Epsom salts are all examples of crystals. Salt crystals are always cube-shaped while snow crystals form a six-sided structure.

#### How do the Borax crystals grow?

Hot water holds more borax crystals than cold water. That's because heated water molecules move farther apart, making room for more of the borax crystals to dissolve. When no more of the solution can be dissolved, you have reached saturation. As this solution cools, the water molecules move closer together again. Now there's less room for the solution to hold onto as much of the dissolved borax. Crystals begin to form and build on one another as the water lets go of the excess and evaporates. This also applies to snowflakes - As water cools the molecules move closer together. Since all water molecules are shaped the same (H<sub>2</sub>O) they align in a six sided crystal.

For more great lessons like this one go to:

[http://cmosc.org/experiments\\_and\\_activities\\_for\\_kids.html](http://cmosc.org/experiments_and_activities_for_kids.html)



## Sonoma County Water Agency is featured in the Kid Scoop Newspaper!

Kid Scoop News is a monthly tabloid newspaper for students in grades 2 through 8. Each month the newspaper explores timely topics, promotes health and fitness, teaches financial literacy, and

showcases student writing and artwork. Each issue is packed with pencil-grabbing games, puzzles, and brain teasers that capture young readers' attention.

Check out Water Agency sponsored activities in these upcoming issues:



- January 2013
- April 2013



## You have the power to shape your future.

The *Siemens We Can Change the World Challenge* is the premier environmental sustainability challenge in the nation that provides K-12 students the tools and inspiration to improve their schools, their communities and their world through project-based learning.

**Siemens**  
WE CAN CHANGE THE WORLD  
**CHALLENGE**



### Fifth Annual Siemens We Can Change the World Challenge

Deadline: March 5, 2013

The annual Siemens We Can Change the World Challenge invites teams of students and their adult advisors to tackle local (K-5), regional (6-8), and global (9-12) environmental problems or issues and find replicable green solutions. Now entering its fifth year, the challenge is a collaborative effort of the Siemens Foundation, Discovery Education, the National Science Teachers Association, and the College Board. The program invites entries from students and team advisors. A panel of environmental experts and science educators will judge teams based on their research, analysis, and the potential of their solution to be replicated on a larger scale. High school students are specifically challenged to address energy, biodiversity, land management, water conservation and cleanup, or air and climate. Student and teacher/mentor prizes, which vary according to grade level, include scholarships, savings bonds, school grants, adventure trips, school assemblies, and more. This year's challenge will award prizes totaling more than \$300,000.

[www.wecanchange.com](http://www.wecanchange.com)

## Websites of Interest

### THE WATER-ENERGY TOOLKIT

[www.rivernetwork.org/resource-library/water-energy-toolkit-understanding-carbon-footprint-your-water-use](http://www.rivernetwork.org/resource-library/water-energy-toolkit-understanding-carbon-footprint-your-water-use)

River Network has a series of calculators and tools to help calculate how much energy you waste by wasting water. By using this toolkit, you gain a better understanding of the energy that can be saved by saving water and the tools help you communicate the potential to fight climate change through water conservation, efficiency, reuse, and low impact development in your community.

### COOL SCHOOL CHALLENGE

[www.coolschoolchallenge.org](http://www.coolschoolchallenge.org)

Conceptually modeled after the U.S. Mayor's Climate Protection Agreement, the Cool School Challenge aims to motivate students, teachers, and school districts to reduce carbon dioxide and other greenhouse gas emissions school wide. At the heart of the Cool School Challenge is the philosophy that big changes start with small steps, and that taken together, simple individual actions create a world of difference. The program hopes to encourage student leadership and foster a new generation of environmental/air quality advocates.

### CLIMATE CORPS BAY AREA

[www.seiinc.org/index.php/programs/eco-smart-schools](http://www.seiinc.org/index.php/programs/eco-smart-schools)

Founded in 1999, SEI helps empower schools and universities, small businesses, local governments, affordable housing agencies, and agricultural communities to reduce pollution and save money through clean energy and resource efficiency. Strategic Energy Innovations' programs link underserved organizations and groups to the resources that can help them reduce their impact on the Earth — and save money by using energy and resources more efficiently.

### U.S. EPA WATER FOR KIDS

[www.epa.gov/water/kids/you.html](http://www.epa.gov/water/kids/you.html)

This site focuses on what kids can do to protect water quality and the environment.

### AMERICA'S WETLANDS

[water.epa.gov/type/wetlands/toc.cfm](http://water.epa.gov/type/wetlands/toc.cfm)

This site will give you a better understanding of the rich variety of wetlands, their importance, how they are threatened, and what can be done to conserve them for future generations.

The Water Education Program is designed to help educators teach students the value of water as an important natural resource. Through education, individuals become aware of how their daily habits affect the management and distribution of water.

The program is made possible through the Sonoma County Water Agency and your local water suppliers: The cities of Santa Rosa, Cotati, Petaluma, Rohnert Park, and Sonoma; the Town of Windsor; and North Marin and Valley of the Moon Water Districts.

