School presentations include discussion of drought and conservation

Sometimes the concept of drought is difficult for students to understand because all of our drinking water comes from within the ground – a source we can’t see.

The Fall edition of The Water Wheel featured photographs showing how water levels in some major reservoirs in north and central California have gone down dramatically over the past three years. You can view the Fall Water Wheel by going to www.cvwd.org/news/publications.php

CVWD believes it is their responsibility to inform and educate all everyone they come into contact with about drought and conservation in the home and what they can do can to help.

The education program calendar can quickly fill and we suggest that you contact the education department at (760) 398-2651 to reserve time for us to visit your school.

Shown below is the variety and content of the presentations we provide. You can schedule any of the presentations for your students or, we can tailor a presentation to meet your needs.

**Tommy and the Canal**

In this enchanting felt board story, Tommy learns a hard lesson that demonstrates the importance of following canal warning signs no matter where they appear.

**Doris Droplet**

Doris transitions from a liquid to a vapor and then into a solid on her round-trip through the water cycle, only to begin her journey again.

**Farmers as Community Partners**

Farmers came to the Coachella Valley because of a plentiful natural water supply. Now with water from the Colorado River, farmers are assured reliable and sufficient water for their crops.

**The Cahuilla Indians and the Valley**

In this desert we call home, the Cahuilla Indians were the first to dig wells for water. Water resources and water acquisition today are compared and contrasted with those of the Cahuilla Indians.

**Water and Development of the Coachella Valley**

This valley wouldn’t exist as it does without the aquifer beneath us; Colorado River water for farm irrigation and the railroad that brought people here.

**The Water Cycle and Water in the Coachella Valley**

The water cycle and uses of water in the Coachella Valley are intertwined, demonstrating how rainfall and snow melt replenish the aquifer. Conservation and maintaining water quality of the aquifer are key points in this presentation.

**The Power of Water and Geologic Forces**

Ancient water lines, depressed valleys and the massive aquifer beneath us are evidence of geology at work. Discover how water affects land and land affects water in this discussion of water and geology.

**Wastewater Recycling and Microorganisms**

Wastewater is recycled and used again by golf courses for irrigation. This saves precious groundwater from being pumped and helps alleviate overdraft of the aquifer.

**The Colorado River and the Coachella Valley**

The Colorado River is an invaluable source of water and was a major contributor in how the valley developed. The waters of the river, while immense, are divided among 7 states and Mexico and are a continual source of conflict and debate.

**Water Conservation in the Coachella Valley**

Safeguarding and conserving the Coachella Valley’s main water source, groundwater, is a district priority. Geology, history, supply issues and preservation solutions are presented to engage students in becoming active conservation participants.

**Ancient Cultures**

A comparative study of how ancient cultures used water and how we use water today. The focus is on ancient Rome, Egypt and Mesopotamia.

All presentations include a discussion about conservation, the current drought that California is facing and its effect on the Coachella Valley.
DMHS students learn what it’s like to be wastewater treatment operators

On Nov. 5 - 6, four students from Desert Mirage High School had a chance to experience what goes on in a day of a wastewater treatment plant operator.

Students spent three hours on each of two days at the plant seeing, experiencing and doing some of the nitty gritty tasks regularly performed by wastewater treatment operators.

The first step was an orientation of the plant processes and how the flows move around the plant. The students were then able to see and do some of the daily jobs that operators perform.

First was headworks, where the flow of raw sewage (approximately 10 million gallons per day) from Indian Wells, Palm Desert, Rancho Mirage and part of Cathedral City enters the plant via a vast network of underground pipes. At headworks, bar screens catch all the big stuff and inorganic items that can’t be processed by the activated sludge (microorganisms that eat the waste in the water).

The flow then moves to aeration basins where microorganisms eat the waste in the water. After that the microorganisms and water are allowed to separate and the microorganisms are removed from the water.

Then the water is filtered and chlorinated and sent to golf courses for irrigation. The microorganisms removed from the system are dewatered and shipped to a composting facility in Arizona for further processing. More than 99% of the flow that comes into the plant is recycled and reused to provide irrigation water for golf courses which helps save our precious groundwater.

The students experienced how HazMat equipment is used while changing chlorine containers. They also ran a number of required tests to ensure that the microorganisms are doing their job and that the recycled water meets state standards for recycled water with regard to bacteria residual chlorine.

As a result of this exclusive hands-on experience, these students now have a greater appreciation for how wastewater is managed in the valley and its importance with regard to sanitation and conservation of the groundwater basin.

Similar opportunities are available to all environmental studies students. Please contact Maureen Perry at mperry@cvwd.org or Kevin Hemp at khemp@cvwd.org to arrange for your job shadow or class tour today.
CVWD uses technology to map Colorado River water use for irrigation

Every year since 1949 when Colorado River water began flowing onto local farms from the Coachella Canal, a report has been sent to the U.S. Bureau of Reclamation (USBR) itemizing what crops are grown with the imported water and the types of irrigation being used.

Information from the crop report has been featured in the District’s annual report for decades and has been useful in efforts to educate the public about agricultural irrigation, demonstrating that the valley’s farmland is extremely productive financially.

In 2011, Zanjero Chris Thomas was given the opportunity to prepare the crop report. Almost immediately, he began refining the way crop data is collected to yield more accurate reporting results for both CVWD and the USBR.

Additionally, there have been many dramatic changes to how data can be collected and used as the district makes increasing use of geographic information systems (GIS) in its daily operations.

“In-house we developed a mobile GIS program for Chris that he can use in the field,” said Matthew Palavido, GIS manager for the district.

“Chris utilizes his laptop’s GPS (global positioning system) to pinpoint his location on an aerial photograph, and uses pull-down menus to select the crop and irrigation being used. The program automatically calculates the number of acres in production.”

Creating the GIS program took about six months, although Palavido said the “little things are still being refined.”

CVWD works with Coachella Valley Association of Governments to acquire aerial photographs of its entire service area every couple of years, which are incorporated into the GIS program.

The new collection method enables the district to compare the estimated water usage by crop type to actual water that is delivered to a geographic area.

At the end of each collection period, data is made available to the public at:

http://cvwdgis.maps.arcgis.com/home/.

Added benefits include the potential to find unreported groundwater pumping, inefficient use or non-conforming uses of water, which when remedied, results in more efficient water use.

This data is highly valuable to the USBR and other agencies in the Southwest continues as they to struggle with ongoing drought. This data can also be used in the classroom for real data analysis that directly ties to the New Generation Science Standards.
CV Water Counts is looking for fun, creative and compelling videos about water conservation. We are asking students to create a 15 to 60 second video to remind our communities and visitors about the importance of saving water.

**How to Enter:** Find and submit your application and YouTube link cvwatercounts.com/videocontest

**Guidelines**

**Theme:** Water Counts  
**Video length:** 15 – 60 seconds  
**Categories:** Grades 3-5; 6-8; 9-12

**Judging**

CV Water Counts will select the top three winners from all categories. Winning videos will be chosen based on creativity, quality and water conservation message. All videos will be property of CV Water Counts to use for our website, social media and partner sites/pages.

**Timing**

**Deadline:** March 31, 2015  
**Winners announced:** Earth Day, April 22, 2015 at cvwatercounts.com/videocontest

**Rules**

All Coachella Valley students in grades 3-12 are welcome to enter. Group submissions are allowed, but only one prize will be awarded to the group. Maximum of two entries per student, including group entries.

**Prizes**

**First Place**
- **Grades 9-12**: GoPro HERO 3+  
- **Grades 6-8**: Living Desert Family Pass  
- **Grades 3-5**: Children’s Discovery Museum Family Pack

**Second Place**
- **Grades 9-12**: $50 Best Buy card  
- **Grades 6-8**: $50 Target card  
- **Grades 3-5**: $50 Barnes & Noble card

**Third Place**
- **Grades 9-12**: $25 Best Buy card  
- **Grades 6-8**: $25 Target card  
- **Grades 3-5**: $25 Barnes & Noble card