



# ***Update on Conservation Connection: Water and Energy in Southern California***

Communication and Legislation  
Committee  
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# CONSERVATION CONNECTION

## ● PROGRAM GOALS AND OBJECTIVES

- For middle school students (grades 6-8)
- Study examples of water/energy systems, supply and demand challenges and alternatives
- Teaches about the conservation of water and energy

# CONSERVATION CONNECTION

## ● CURRICULUM OVERVIEW

- Activity-oriented Student Book and Teacher Guide
- Approved by California Department of Education
- Water and energy survey/audit

# CONSERVATION CONNECTION

## ● SURVEY/AUDIT COMPONENT

- Home and School Water and Energy Surveys
  - Key component of curriculum
- Students track and evaluate water and energy use
  - At home (via hard copy)
  - At school (via online survey)
  - Students develop action plan to make changes and improvements

# Water & the Future

Continued...

## Conservation

The best way to stretch our water supply is to conserve water. Conservation means not wasting water and using water efficiently, that is getting the same results using less water.

Californians are familiar with conservation. California, especially southern California, has always had droughts—long dry periods without much rain or snow. The longest drought in California lasted 60 years! During these times, people had no choice but to use less water. But if we used less water **every day**, we could:

- make our water supply go further
- reduce costs for distributing water
- benefit the environment by taking less fresh water out and putting less wastewater back in.

Water can be conserved in homes, on farms, at businesses, and in industries—through both improved technology and non-wasteful practices.

## Improved Technologies

Advances in *technology* are helping us conserve water indoors and outdoors. Improvements in *water efficiency* include:

- faucets and showerheads that put out fewer gallons per minute
- toilets that use less water with every flush
- clothes washers and dishwashers that use 40% less water
- recycling systems for water used in car washes, laundromats, amusement parks, factories, power plants
- drip irrigation systems that put water only where it is needed
- evapotranspiration (ET) systems that monitor the evaporation from soil and the transpiration from plants to determine the exact amount of water lawns and plants need
- irrigation systems that return runoff from the bottom of a field to be used again.



NEW TECHNOLOGIES



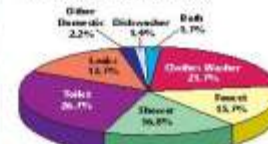
CONSERVATION PRACTICES



## Water-Saving Practices

In southern California, 95% of water use is in the urban sector. Therefore, reducing water use in our homes is especially important. For example, everyone can:

- turn water off when brushing teeth or washing dishes
- take shorter showers
- wash only full loads in clothes washers and dishwashers



Typical Household Water Use (Indoor)  
From *WaterWise: A Guide to Efficient Water Use*

Though very important, the amount of water used indoors is far less than the amount of water used outdoors in southern California—especially for landscape watering. Up to 70% of a household's water use can go

outdoors. To help reduce that amount, people can:

- plant low-water use California Friendly plants
- turn off sprinklers when it's raining
- use a broom instead of a hose to clean pavement.

Conservation—with both water-saving devices and practices—can save millions of gallons of water, as well as millions of dollars, every day.



How can you conserve water?



# WATER MATH

**Part A:** Look at the sample water rates and water bills to answer the following questions.

CITY WATER AGENCY WATER RATES SINGLE FAMILY RESIDENTIAL		
TIER	UNITS USED	COST/UNIT
1	0-10	\$2.04
2	11-22	\$2.72
3	over 23	\$3.40

BILL #1 CITY WATER AGENCY	
From 1-5-09 to 3-2-09	Days of service - 57
Current Meter Read	607
Previous Meter Read	793
	<b>14 units*</b>
Base Charge	= 41.00
First Tier 10 units	= 20.40
Second Tier 4 units	= 10.88
	<b>\$72.28 TOTAL AMOUNT DUE</b>

BILL #2 CITY WATER AGENCY	
From 7-3-09 to 9-2-09	Days of service - 61
Current Meter Read	696
Previous Meter Read	852
	<b>33 units*</b>
Base Charge	= 41.00
First Tier 10 units	= 20.40
Second Tier 12 units	= 32.64
Third Tier 11 units	= 37.40
	<b>\$131.44 TOTAL AMOUNT DUE</b>

\*1 unit = 100 cubic feet (HCF) = 748 gallons

- How many units of water were used on Bill #1? \_\_\_\_\_  
How many units of water were used on Bill #2? \_\_\_\_\_
- Why do you think the amounts for water use are different?  
(Hint: Look at the dates.)
- What is this family's average daily use of water in gallons for each billing period?  
Bill #1 = \_\_\_\_\_ gallons/day Bill #2 = \_\_\_\_\_ gallons/day
- Estimate how much water this family might use in a year.  
\_\_\_\_\_ Units (HCF) = \_\_\_\_\_ Gallons
- What would be the total cost of water for a year? \$ \_\_\_\_\_

**Part B:** Use the figures from your "Personal Water Use Log" to answer the following questions:

- How many gallons of water would you use in a year? \_\_\_\_\_
  - How many gallons of water have you used in your life so far? \_\_\_\_\_
  - How many would you use by the time you are 50? \_\_\_\_\_
- What is the range of daily water use in your class?  
From \_\_\_\_\_ to \_\_\_\_\_
  - What is the average use? \_\_\_\_\_
  - What is the median use? \_\_\_\_\_
  - Estimate how much water would be used each day for personal uses...  
by your class? \_\_\_\_\_  
by the entire school? \_\_\_\_\_  
by your community? \_\_\_\_\_  
by people in southern California (population 19 million)? \_\_\_\_\_  
by people in the entire State (population 38 million)? \_\_\_\_\_
  - How many fewer gallons would you have to use every day to reduce your water use by 10%? \_\_\_\_\_  
by 20%? \_\_\_\_\_



How would you do it?

# CONSERVATION CONNECTION

## ● PILOT PROGRAM ROLLOUT

- Member Agency Participation
  - One school per participating member agency
  - One teacher and two classes per school (approx. 70 students)
- Pilot Program Assessment
  - Working with member agencies determine most effective method to launch program to a broader audience

# CONSERVATION CONNECTION

## ● PILOT PROGRAM ROLLOUT TIMELINE

- Member Agency Curriculum Training
  - (Sept./Oct. 2010)
- Member Agency /Schools Pilot Program
  - (Fall 2010 /Spring 2011)
- District wide Launch
  - (Fall 2011)



# CONSERVATION CONNECTION

- QUESTIONS?