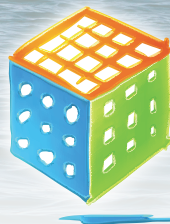



# Wise Water Conservation



OC & LA

**DiscoveryCube**

Part of the Discovery Science Foundation



Malibu is home to the largest Area of Special Biological Significance (ASBS 24) which includes about half of the Malibu coastline. ASBS 24 stretches twenty-four miles along the coast from Latigo Point to Laguna Point near Point Mugu. Pollutants, including polluted stormwater and runoff from residential and commercial activities, may not be discharged in these protected areas. Keep Malibu clean and conserve water with the following resources:

- Report pollution threats to water quality to the City's 24-hour Hotline at (310) 456-2489, ext. 311.
- Report water waste at [MalibuCity.org/waterwaster](http://MalibuCity.org/waterwaster).
- Malibu Smart is offering special rebates for qualified Malibu residents through 2019. Visit [MalibuSmart.org](http://MalibuSmart.org) for more information.
- Support Malibu's Clean Bay Certified Restaurants. Find out more at [MalibuCity.org/CleanBayCertified](http://MalibuCity.org/CleanBayCertified)
- Find out about local Hazardous Waste Collection events at [cleanla.com](http://cleanla.com) or call 800-CLEANLA.

**Remember the watering rule – 2-8-48:**

- Water only 2 days per week
- Water only between the hours of 8 pm and 8 am
- Do not water within 48 hours before or after a rain.

## Dear Parents and Teachers:

Recently, your child or student participated in a Discovery Cube water education assembly sponsored by the City of Malibu. They learned that, due to Earth's temperature rise, Southern California is facing increasingly serious water challenges. Like Southern California, there are many populations and regions around the world that do not have adequate access to clean water or enough water to survive. As the demand for water increases, the burden will be unequal and impact certain communities more than others.

To encourage everyone to save water, we've provided some ideas for water use efficiency in this booklet, along with some information that aligns with grade-specific academic requirements.

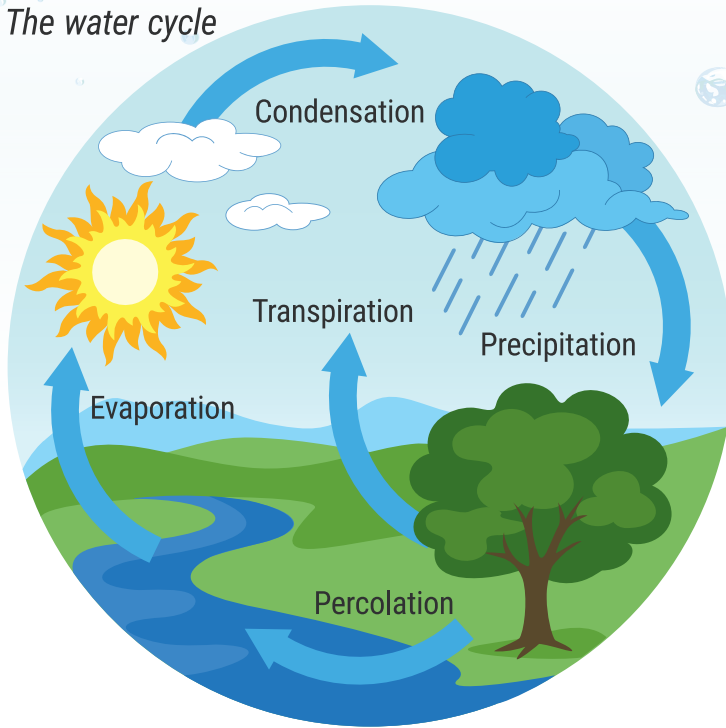
Please take some time to look over and complete the lessons in this booklet with your child or student. Together, we can make a difference.

Keith Brush  
Director of Education  
Discovery Science Foundation  
714-263-3856



# The Water Cycle

*The water cycle*



When warm air rises, it carries moisture with it. About 90% of the moisture in our atmosphere comes from evaporation from bodies of water such as rivers, lakes, or oceans. The remaining 10% comes from plants as they transpire. As this moisture-laden air cools, the water vapor condenses into clouds. These clouds drop rain or snow in the mountains. When the snow melts, the water flows downhill forming lakes, rivers, and streams that flow into the ocean.

# Southern California Chaparral Ecosystem



California Department of Water Resources

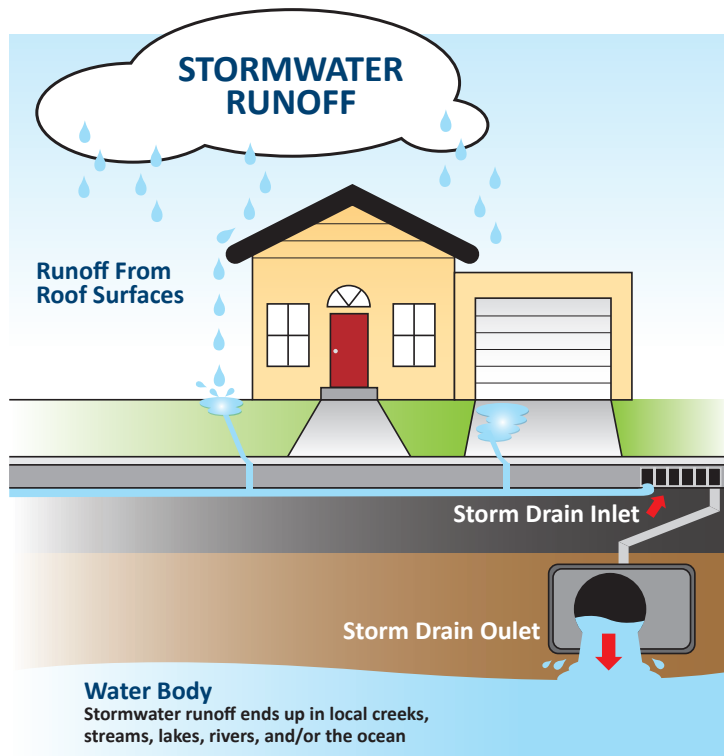
Southern California is located between 30 to 40 degrees north of the equator, placing it in the subtropical climate zone. This means that we receive a limited amount of rainfall. Because of California's topography, most of the rain and snowfall we do receive is dropped in the mountain areas of Eastern and Northern California.

Malibu gets 100% of its freshwater from the California and Colorado River Aqueducts. This imported water moves hundreds of miles through a series of pipes and canals in order to be used by residents and businesses in Malibu.



# How Does the Water Cycle Affect Our Water Supply?

- As rain washes over streets, parking lots, and lawns, it can pick up pollutants from daily activities.
- Stormwater can send a toxic mix of car chemicals, pesticides, cleaning products, debris, and pet and wildlife feces into streams and the ocean.
- Once litter reaches the ocean, it rarely comes out. Most litter, especially plastic, does not biodegrade and stays in the ocean for hundreds of years.



# Importance of Water Resiliency

On average, Southern California has less than 22 days of rain per year with an average annual rainfall of only 13 inches. In 2013, California entered into a period of prolonged water shortage. Cities and citizens took an active role in water conservation resulting in cumulative statewide water savings of 23.9% from June 2015 to March 2016 compared with water usage in 2013. This was the start of Californians adjusting to a water resiliency mindset to make sure we have water in our community into the future.

What can cities do to save water?

Water Source	Description	Cost
Harvesting Rainwater	Collecting rainwater for later use	\$
Conservation	Using less water for common activities	\$
Recycled Water	Cleaning and reusing wastewater for non-consumption	\$\$
Imported Water	Aqueducts bringing us water from outside Southern California	\$\$

Harvest Rainwater	
Cities' Actions	Families' Actions
Permeable pavement and large cisterns.	Redirect gutter downspouts away from paved surfaces. Install rain barrels to capture water running down rooftop gutters.



# A Call to Action!

## Be Water Wise at Home

Involve the whole family in these two water wise audits. See how many boxes you can check. Calculate how much water your family is saving both inside and outside your home.

**Water Saved:**

- ☐ We run the dishwasher only when its full (Saves 5-15 gallons per load) \_\_\_\_\_
- ☐ We have aerators installed on kitchen and bathroom faucets (Each aerator saves 1.2 gallons per person per day) \_\_\_\_\_
- ☐ We have water efficient showerheads in our bathrooms (Each shower head saves 1.2 gallons per minute or 10 gallons during a 10 minute shower) \_\_\_\_\_
- ☐ We turn off the water when brushing teeth or shaving (Saves 10 gallons per person per day) \_\_\_\_\_
- ☐ We take 5 minute showers instead of 10 minute showers (Saves 12.5 gallons with a water efficient showerhead) \_\_\_\_\_
- ☐ We wash only full loads of laundry (Saves 15-45 gallons per load) \_\_\_\_\_
- ☐ We have high-efficiency toilets (1.28 gallons per flush – which saves 19 gallons per person per day) \_\_\_\_\_
- ☐ We have checked that none of our toilets are leaking (Saves 30-50 gallons per day per toilet) \_\_\_\_\_

**Total:** \_\_\_\_\_

**Water Saved:**

- ☐ We use a broom instead of a water hose to clean up outdoor areas (Saves 8- 18 gallons per minute) \_\_\_\_\_
- ☐ We have installed a drip irrigation system in our front and back yards (Saves 15 gallons each time you water) \_\_\_\_\_
- ☐ We have checked to make sure sprinklers do not send water down the driveway or onto sidewalks (Saves 12-15 gallons each time you water) \_\_\_\_\_
- ☐ We use an automatic shut-off nozzle when watering with the garden hose (Saves 17 gallons per minute) \_\_\_\_\_
- ☐ We have checked to make sure we don't have any broken or leaky sprinkler heads (Saves 20 gallons per head every 10 minutes) \_\_\_\_\_
- ☐ We use mulch to cover soil by plants and trees in our yard (Saves 2-3 gallons per 100 square feet each time you water) \_\_\_\_\_
- ☐ We water outdoor plants early in the morning or late at night (Saves 25 gallons each time you water) \_\_\_\_\_
- ☐ We take our vehicle to a carwash where the water is collected and treated to be used in public greenery (Saves 50 gallons per car washed) \_\_\_\_\_
- ☐ We have taken out part of the lawn and replaced it with drought resistant plants and trees. (Saves 3-6 gallons per 100 square feet each time you water) \_\_\_\_\_

**Total:** \_\_\_\_\_

Did you check every item? If not, set a goal to be water-wise and revisit this audit in 6 months to see how much more water you can save.

# What About Waste?

Water conservation, wisely using our freshwater supply, is very important. We also need to be mindful of water preservation which are efforts to keep our natural waters clean. Here are some things you can do to keep our water clean:

- ☐ Pick up pet waste.
- ☐ Pick up litter and place it in trash can or recycling bin.
- ☐ Fix oil leaks in the family cars.
- ☐ Don't sweep grass clippings into the street.
- ☐ Use raked leaves and grass clippings as mulch in the garden.
- ☐ Reduce your use of pesticides and fertilizers in your garden.
- ☐ Use biodegradable cleaning products
- ☐ Don't wash paints, solvents or other chemicals into the gutter.
- ☐ Don't purchase water in disposable plastic bottles.  
Carry a refillable water bottle instead.
- ☐ Find the Hazardous Waste disposal site closest to your home.
- ☐ Properly dispose of Hazardous Materials.
- ☐ Inform others on what they can do to keep our water clean.
- ☐ Participate in neighborhood clean-up efforts.
- ☐ Organize a school, neighborhood, or beach clean-up event.

**For information  
on how to safely dispose of  
motor oil, paint, batteries, and  
harmful household chemicals,  
visit [www.cleanla.com](http://www.cleanla.com)  
or call 800-CLEANLA.**

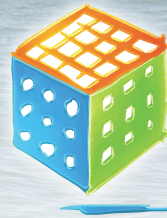




**CITY OF SANTA MONICA**  
**A Sustainable Community**  
**[sustainablesm.org](http://sustainablesm.org)**



SANTA MONICA-MALIBU UNIFIED SCHOOL DISTRICT



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**For more information, call 714.913.5030**