



Science

Sustainability

Sleuths

Overview

## PROGRAM AT A GLANCE



### Program Description

Vampire energy, sustainability, water footprint? What does it all mean? Discover the mysteries of your local ecosystem through hands-on activities, musical science, interactive videos, and career exploration. By engaging in a variety of activities on this eco-friendly adventure, environmental enthusiasts, just like you, will uncover the mysteries of clean water, investigate air quality, and learn about advanced technologies that create green energy. You have the power to engineer positive change in your local community and help create a healthier future for our planet. In partnership with Discovery Cube, explore the power of water and energy to identify ways you can personally make environmentally conscious decisions.

This program contains 45-60 minute sessions and is designed for students in 3rd-5th grades.



### Program Objective

A science sustainability sleuth is a detective who learns all about the science of using water and energy in ways that help, instead of hurt, our environment. We only have one planet Earth, so it is important to keep our planet healthy and clean. This 10-session program will immerse students into a world of hands-on science, engaging video content, and will excite them to become a conservation expert!



## DAILY SUMMARIES

### Day 1: Los Angeles' Environment

It can take thousands of years for one water molecule to move its way through the entire water cycle. By watching a special kid-friendly documentary and doing several hands-on activities, students will learn about and create their own mini-water cycle models.

The Water Cycle has three basic parts: evaporation (when water turns from a liquid into a gas), condensation (when water vapor turns from a gas into a liquid), and precipitation (when liquid or solid water falls down onto the surface of the Earth).

To start learning about the importance of water conservation, first watch [The Water Cycle](#) documentary.

### Day 2: Salt Water

Ocean water is super salty, so you don't want to drink it. But, through this fascinating investigation into salt water and this fun experiment, you will learn how to harness the power of the water cycle to separate salt from water.

Desalination is the process of removing salt and other dissolved minerals from water. Even though California is next to the world's largest ocean, it is expensive and difficult to turn ocean water into drinking water.

To continue learning about the importance of water conservation, watch [Hidden Worlds: Mysterious Salts](#).

### Day 3: Sources of Water

California has really tall mountains with lush, agriculturally rich valleys down below. Learn about the Big Bumpy Land we call home and show off these features in your very own 3D relief map as you learn where our water comes from in Southern California.

California has a rich landscape diversity: from a long coast line, a lush central valley, deserts, and lots of tall mountains. Much of Southern California doesn't have a wealth of drinking water, so a lot of our water comes from snow melting in the tall California mountains.

To start learning about the geography of our land, first watch [Big Bumpy Land](#).



## Day 4: Aqueducts

Put your engineer cap on as you design, build, and test your own aqueduct maze to learn how we transport water.

Engineers build aqueducts to bring clean, fresh water from places where it rains or snows to places where people live in more arid environments, like Southern California.

To start learning about aqueducts, first watch [From the Mountains to Your Tap](#).

## Day 5: Groundwater

From a guest [scientist spotlight video](#) to a delicious and healthy science treat, this lesson will introduce you to the science behind aquifers and groundwater storage.

Aquifers are natural underground storage systems for water. To introduce this class, visit: <https://youtu.be/zGCanqiMXSY>, where a Discovery Cube Instructor will broadcast a live session showing all the students participating in Science Sustainability Sleuths how to make an aquifer parfait, while helping them to understand groundwater and aquifers. The Instructor will also answer several questions students asked after watching the Aquivator film.

## Day 6: Water Conservation

Discover the hidden ways you use water every day and learn how you can make choices to reduce your water use. Then, be inspired by our custom water footprint calculator and learn how to talk to a computer by creating your own code.

We all use water every day to drink, cook, and clean, but it's also used to make the clothes we wear, the food we eat, and the gas we use to power our cars.

To start learning about water conservation, first watch [Ways to Save](#).

## Day 7: Watersheds

When it rains, water flows past our homes and schools on its way to oceans and lakes. Build a watershed model of a fictional town to see how the water flows and hear from a local scientist who specializes in monitoring the health of our watersheds.

You may live downstream from another part of your watershed, and the water that flows past your home or school will probably go toward someone else's home. You can do your part to keep the water clean by picking up trash and being careful not to over fertilize plants.

To start learning about watersheds, first watch [Scientist Spotlight: Watersheds with Mo Wise](#).



## Day 8: Air Quality

The air is made up of tiny molecules and particles too small for us to usually see, but these experiments will help you see the quality, speed, and power of the air around you.

The quality of the air around you is constantly changing based on the temperature, humidity, direction and strength of the wind, and location of nearby fires or factories. Wind farms use turbines to harness the power of the wind and give us electrical energy.

To begin learning about air quality, first watch [Sustainable Energy Song](#).

## Day 9: Renewable Energy

You don't need to be an electrician to understand circuits! In this lesson, you will power on a lightbulb and harness the power of the sun to make a s'more or some nachos as you learn about renewable energy.

Renewable energy is energy created from the Earth's natural resources that cannot be used up or exhausted. There are several different forms of renewable energy, including energy generated from the sun, wind, and water. Most renewable energy is turned into electricity, which can be used (for example) when you flip a light switch on and create a closed electrical circuit.

To start learning about renewable energy, first watch [Hidden Worlds: Earth Power](#).

## Day 10: You Make a Difference

Congratulations! You have learned all about Earth's natural resources. Now it's time to do your part – you can make a difference and help conserve water and energy. And it's not even hard! Through a simple water scavenger hunt and by leaving yourself reminders around your home, you can reduce your water and energy use.

Water can be found in many different places around your home and is used for cooking, cleaning, and drinking. But water leaks waste clean water, can harm your home, and mean you have to pay for water you aren't using, so it's important to find and fix leaks as quickly as possible. From finding and fixing leaky pipes to reducing your energy use, through these simple final challenges, you can become a conservation expert!