Hello Educators!

Our greatest respect goes out to you, as educators, working to remotely as you connect both content and current issues with your students. The CA Safe to Swim Network offers resources on the topic of water quality. These resources connect environmental science, pollution, watersheds, and public health. We have provided resources in grade bands.

The Safe to Swim Network is a state-led group of stakeholders who work in the recreational water quality field. Stakeholders include the State Water Resource Control Board, county public health agencies, federal agencies, as well as Nonprofits. Please feel free to reach out to us if you have any questions, comments or concerns.

Recreational Water Quality: My Water Quality Index
https://mywaterquality.ca.gov/safe_to_swim/index.html

Sample Guiding questions:
What happens to water when it rains on our streets?
How do I know if the water is healthy for swimming or drinking?
What are the impacts of pollution on watersheds?

Elementary:
**Freddy the Fish Teaches about Stormwater – animation teaches kids about what happens to rain after it hits the ground, where storm drains lead to, and what we can do to help prevent water pollution.(4:28 minutes) https://www.youtube.com/watch?v=jjPfLhJbdc0
The Water Cycle The Dr. Binocs Show: Learn Videos For Kids (3.08 minutes) animation sharing activities to demonstrate water cycle with boiling water
https://www.youtube.com/watch?v=ncORPosDrjI

Upper Elementary or lower elementary with guidance
Project Wet: Discover Water: The Role of water in our Lives animations to build an understanding of vocabulary and basic concepts (soap and Water Science, watersheds and the water cycle). Guidance on how to use website is available.
https://www.discoverwater.org/

Upper Elementary:
Only Rain in the Storm Drain Did you know that only rain goes in the storm drains? Here's a few things you can do to help limit water pollution and make our planet a much better place to live. (6:20 minutes) https://www.youtube.com/watch?v=LsBKpArM-v0

What is Water Pollution? What Causes Water pollution: The Dr. Biocs Show: Peekabook Kids (5:47 minutes) https://www.youtube.com/watch?v=MEb7nnMLcaA

Water Education TV: A-maze-ing Stormwater – create your own watershed to explore (Be creative with materials at home- or see as a demo)
https://www.youtube.com/watch?v=6GJIrwa99Ks&feature=emb_rel_end

All ages

We All Live in a Watershed: overview of watersheds General overview of what is a watershed and impacts on the watershed (5.24 minutes) https://www.youtube.com/watch?v=d-RsjIYNBkA

Water Education Resources: Water Education Foundation: understanding water and our connection with water, water conservation videos and resources available for use Pre K – College. https://www.watereducation.org/post/information-about-water-resources-covid-19

Middle School

Knowledge Drop: Heal the Bay - Beach Report Card (37:29 minutes) Pre-recorded knowledge drops; includes survey questions and answers. lginger@healthebay.org
https://register.gotowebinar.com/recording/2647981746921586183

NOAA Data in the Classroom lesson plan– Monitoring Water Quality Provides resources to guide students through understanding water quality (temperature, salinity and dissolved oxygen) in estuaries and how to read and analyze data and graphs (can be adapted to HS)
https://dataintheclassroom.noaa.gov/content/water-quality

High School

Stormwater pollution and Green Infrastructure Solutions (teaches about storm water management is all about and how it can affect our lives (29:29 min)
https://www.youtube.com/watch?v=ATNy-vaIPXI
How Contaminated Beach Water Makes Swimmers Sick: NRDC
Steve Fleischli and Rachel Noble discuss how water contaminated with fecal matter and other urban runoff can make swimmers sick. (3:33 minutes)
https://www.youtube.com/watch?v=_qV3YggPc44

Beach Related & Recreational Water Illnesses, Pollution & Pathogens: US EPA
Pollution can be harmful to humans who recreate in the water. These resources highlight some of the health issues.(4:29 minutes) https://www.youtube.com/watch?v=iAmHJ31xqkg

Harmful Algal Blooms and Water Recreation: Surface Water Ambient Monitoring Programs (SWAMP) State Water Resources Control Board – overview of fresh water harmful algal blooms and impact upon ecosystem and human health. For more information, please visit: (35:14

minutes) https://www.youtube.com/watch?v=GS62ez89LnI&list=PLMSa5d-iIl6M8-LLqPvSb2wwpsHSUJfWc&index=7&t=0s

Harmful Algal Blooms Pollute US Lakes: Environmental Working Group Impacts of algal blooms from causes for blooms to impacts on the ecosystem and humans (4:46 minutes) https://www.youtube.com/watch?v=LqXKWT9cyOk

Understanding Harmful Algal Blooms: Minnesota Sea Grant overview of what freshwater harmful algal blooms are and the impacts with Minnesota as the case study. (4:24 minutes) https://www.youtube.com/watch?v=DfNhy6_9jww

A Swimmable California: The Importance of Sate to Swim Policies and Programs. Overview of standards and concerns with water quality as shared with Clean Stream (51.:05 minutes) Policyhttps://www.youtube.com/watch?v=tLXUgXSKYf8&list=PLMSa5d-iIl6M8-LLqPvSb2wwpsHSUJfWc&index=1

Is it Safe to Swim in Our Waters?
These resources go over the actions taken to address pollution and keep people safe. https://mywaterquality.ca.gov/safe_to_swim/index.html

Stormwater Pollution and Green Infrastructure Solutions: The Nassau County Soil and Water Conservation District produced this educational film on Stormwater Pollution and Green Infrastructure (29:29 minutes) https://www.youtube.com/watch?v=ATNy-vaIPXI&t=912s

NGSS standards that correlate by grade level

K-ESS3-3.	**Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment**
K–2-ETS1-1.	**Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.**
2-ESS2-2.	**Develop a model to represent the shapes and kinds of land and bodies of water in an area.**
2-ESS2-3.	**Obtain information to identify where water is found on Earth and that it can be solid or liquid.**
3-LS4-4.	**Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change**
4-ESS3-2.	**Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.***
3–5-ETS1-2.	**Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**

5-ESS2-1.	**Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.**
5-ESS2-2.	**Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.**
5-ESS3-1.	**Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.**
MS-ESS2-4.	**Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.**
MS-ESS3-3.	**Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.**
MS-LS2-4.	**Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.**
MS-ESS3-4.	**Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.**
HS-LS2-6.	**Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.**
HS-LS2-7.	**Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.**
HS-ESS3-1.	**Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.**