

Sewer Science Program

Sewer Science Program is an inter-disciplinary microbiology, chemistry, physics, and environmental curriculum, tailored to reach a diverse population of students at high school level, including those with special education needs and limited English speaking skills.

The program is designed to stress the importance of pollution prevention, and offers a comprehensive educational opportunity through the use of an innovative mobile water treatment lab linking science and technology to environmental issues.

Sewer Science Program corresponds to the learning standards and teaching objectives established for science curriculum in California. It provides interdisciplinary studies in area such as:

[Chemistry](#)

[Environmental Science](#)

[Microbiology](#)

[Physics](#)

[Statistics](#)

This program gives an overview of wastewater treatment and presents the concept of the following processes:

[Primary sedimentation](#)

[Biological treatment](#)

[Secondary sedimentation](#)

[Filtration](#)

[Disinfection](#)

Laboratory

During the one-week laboratory session, students prepare wastewater by adding common contaminants to simulate residential sewage and treat this wastewater progressively in three stages. The first stage is sedimentation, where the larger solids settle to the bottom, and the lighter ones float on top.

During the biological treatment, activated sludge from wastewater treatment plant is added to an aeration tank, where air is pumped into the tank constantly to keep the microorganisms alive. Students will study and identify these microorganisms using microscopes and an identification chart.

The last two stages of treatment are filtration and disinfection. After biologically treated wastewater is left to settle in the secondary sedimentation tank, it is passed through a carbon-sand filter. The final step of disinfection completes the process of wastewater treatment.

Students will measure wastewater quality, statistically analyze the series of data collected at each stage of the treatment processes, and learn about the negative impact of these contaminants to the environment. The wastewater quality tests include the measurement of Ammonia concentration, pH, Chemical Oxygen Demand, and turbidity. Students are instructed about laboratory safety techniques, along with analytical and scientific methods. They will observe how wastewater quality improves with each operation and compare their results with safe water standards.

Cost

This program has been taught in Los Angeles area schools since October 2003. Schools are not required to pay any fees for the services provided by the Department of Public Works. All chemical and equipment costs have been funded by the City of Los Angeles. The program also provides an in-class facilitator (mentor) to train and assist participating teachers.

Tour/Fieldtrip

Teacher and Students are invited to tour the City's Donald C. Tillman (DCT) Wastewater treatment plant or Hyperion Wastewater Treatment Plant.

Donald C. Tillman Water Reclamation Plant

The Japanese Garden
6100 Woodley Ave,
Van Nuys, California 91406
Tel (818)756-8166 | Fax (818)756-9648

www.thejapanesegarden.com

Hyperion Wastewater Treatment Plant

12000 Vista del Mar
Playa del Rey, California 90293
Tel (310)648-5363 | Fax (310)648-5612

www.lasewers.org/treatment_plants/hyperion/tour/

Or send an email to:
san.elc@lacity.org

Contact Us

City of Los Angeles
Bureau of Sanitation
Industrial Waste Management Division
2714 Media Center Drive,
Los Angeles, California, 90065

For information, sponsorship or registration,
please contact Sewer Science Coordinator:

Phone: (323) 342-6200

Fax: (323) 342-6111

Email: Sewer.Science@lacity.org



www.wef.org



www.lacitysan.org

As a covered entity under Title II of the Americans with Disability Act, the City of Los Angeles does not discriminate on the basis of disability and upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

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CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SANITATION

