



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2017 Volume II: Watershed Science

Chemistry of Inland Waters

Guide for Curriculum Unit 17.02.04
by Michael Petrescu

This unit exposes students to basic concepts of hydrology, like the hydrological cycle, water budget of a river and chemistry of carbon in freshwaters. Students will explore and study the components of the hydrological cycle, the factors that influence this cycle, investigate the water budget equation and compare and contrast two watersheds that have similar overall amount of precipitation, but differ in terms of temperature and climate.

Students will also learn about pollutants in fresh waters, pH and pOH of water and its influence on the ecosystem, chemistry of carbon and heavy metals and how does a sewage treatment plant work. As a part of their curriculum, a field trip to a local sewage treatment plant is highly recommended for students and teachers.

Each lesson will be accompanied by a lesson plan. Depending on lesson, also included will be examples and applications (problems to be solved by students using concepts presented in the lesson).

The unit is intended to be taught in 10th or 11th grade Physical and Environmental Science classes, but it can be used also by middle school 7th and 8th grade Science teachers to expose students to concepts related to physical, chemical properties of water, states of matter, physical and chemical change, water cycle and basic geology.

The unit will last approximately three weeks.

(Developed for Engineering, grade 8; recommended for Physical Science, grade 10, and Environmental Science, grade 11)

<https://teachersinstitute.yale.edu>

©2019 by the Yale-New Haven Teachers Institute, Yale University

For terms of use visit <https://teachersinstitute.yale.edu/terms>