



# YALE NATIONAL INITIATIVE

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Curriculum Units by Fellows of the National Initiative  
2011 Volume V: Chemistry of Everyday Things

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## **Soap: Clean for the Environment or Just Us?**

Guide for Curriculum Unit 11.05.01, published September 2011

by Arlene Burns-Moguel

This curriculum unit is designed for grade 8 physical science but can be adapted for a chemistry class. The unit addresses the standards of states of matter beginning with atoms, molecules and solutions. It allows the students to explore the chemistry of soap making, while focusing on physical and chemical properties and changes, using creative and fun interactive activities. Students will investigate pH, surface tension, surfactants, emulsifiers, viscosity, temperature changes, substances, and solutions. The unit then considers the chemicals involved in making environmentally friendly soap versus those in traditional soap. Students will understand ionic and covalent bonding and how to balance chemical equations to reflect the law of conservation of matter. This unit will also encourage the students to become more personally aware of hygienic practices. It promotes a respect for the environment, and allows the students to make their own soap by using a number of variables. This curriculum unit encourages respect, responsibility, relevancy, and ownership of a common household item, in promoting the Georgia eighth-grade science standards.

(Developed for Physical Science, grade 8; recommended for Physical Science, grade 8, and Chemistry, grades 9-10)

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