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Curriculum Units by Fellows of the National Initiative
2012 Volume V: How Drugs Work

Can You Pill It? Demystifying Painkillers

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This unit is designed to enable students taking a college-prep chemistry class to see that chemistry is very much a part of their everyday life. In this unit, students will learn the chemistry of four over-the-counter pain relievers: aspirin, ibuprofen, naproxen and acetaminophen. The first part of the unit describes factors affecting reaction rate, with special emphasis on the role of catalysts. Mechanisms for sensing pain and the biochemical reactions involved in the pain pathway is the focus of the second part. In the third and last part of the unit, students explore how aspirin, ibuprofen, naproxen and acetaminophen work as pain relievers. Strategies such as demonstrations and laboratory investigations, cooperative learning, games and simulations and use of graphic organizers will be used to implement the unit.

(Developed for CP Chemistry, grades 10-12; recommended for CP Chemistry, Honors Chemistry, and Physiology, grades 10-12; and Honors/AP Biology, grades 9-12)