

Curriculum Units by Fellows of the National Initiative 2010 Volume VI: Evolutionary Medicine

Survival of the Fittest?—Evolution and Human Health

Guide for Curriculum Unit 10.06.08, published September 2010 by Connie Scercy Wood

Biology teachers are asked to teach a huge amount of material in a very short time. The only way to accomplish this is to integrate topics into one unit. With this two week unit, I will be using evolution to help students understand how their bodies work and why they sometimes don't seem to work so well. By bringing in some of the ideas about evolutionary medicine, I will help my students see that evolution is not just about the past, but is happening all around us, and affects our everyday lives.

I begin with an introduction to natural selection and how it causes changes in populations. I include activities that explore the evolution and effects of sickle cell anemia and the disease's connection to malaria. Students will observe normal and sickle-shaped red blood cells and investigate the effect of blood cell shape on the function of the circulatory system using models to help them visualize how the shape of the cells leads to the symptoms of sickle cell anemia. Other systems will be described in terms of their evolutionary adaptations and examples of genetic disorders of those systems which have persisted in populations in spite of their costs to the individual.

(Developed for Biology I, grade 10; MYP Biology I, grade 9; recommended for Biology I, grades 9-10)

https://teachers.yale.edu

©2023 by the Yale-New Haven Teachers Institute, Yale University, All Rights Reserved. Yale National Initiative®, Yale-New Haven Teachers Institute®, On Common Ground®, and League of Teachers Institutes® are registered trademarks of Yale University.

For terms of use visit <u>https://teachers.yale.edu/terms_of_use</u>