

LS-HHMI Outreach Summer Curriculum Project Classroom Resource Information Form

Title	Unit Introduction; Survey; Survey Analysis; Exercise in a Pill Questions; Food Pyramid Instructions; Links for Articles; Reading Questions		
Resource Type	Lesson Plan <input type="checkbox"/> Activity <input type="checkbox"/> Lab Activity <input type="checkbox"/> Homework Assignment <input type="checkbox"/> Correlations <input type="checkbox"/> Other <input type="checkbox"/> <Specify>		
Description	Every day humans conflict with the very genetics that helped them survive and flourish these last million years—a penchant for high-density foods and the efficient ability to store these extra calories. Human lifestyle change has occurred at a faster rate than genetic change, and our bodies are paying the price.		
Author(s)	Jessica A. Forton		
Author Institution(s)	Melrose High School		
Objective	1. Identify modern changes in diet and exercise that conflict with our evolutionary selves. 2. Analyze personal and class data regarding diet and exercise practices.		
Key Concepts	Human evolution; homeostasis; disease; exercise; public policy; diet; genetics		
Student Prep	Students should be familiar with human anatomy and physiology and know how genetics and adaptations/evolution are related. Students should answer the survey as the first part of the unit. The reading may take longer than class period and may be finished for homework.		
Materials	Internet access (watch film clip, download articles). All of the activities can be done on the computer or by hand. Activities by hand: 1. the pyramid/exercise regimen: large paper or poster board, markers or other colorful utensils; 2. data analysis: calculator, graph paper, colorful writing utensils, ruler		
Grade Level(s)	Honors Biology (9th) CP: divide the reading for lower levels; provide processed survey data		
Teacher Prep Time	Teacher should be familiar with the readings, film clip and information in Intro. PPT	Class Time	Entire unit—5 x 57 min + homework
National Standards	<To which National Science Education Standards does the resource correlate?>		
State Standards (Mass.)	4.1 Explain generally how the digestive system (mouth, pharynx, esophagus, stomach, small and large intestines, rectum) converts macromolecules from food into smaller molecules that can be used by cells for energy and for repair and growth. 4.7 Recognize that communication among cells is required for coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood, and some cells produce signals to communicate only with nearby cells. 4.8 Recognize that the body’s systems interact to maintain homeostasis. 5.3 Explain how evolution through natural selection can result in changes in biodiversity through the increase or decrease of genetic diversity within a population.		
Sources	<If the resource is derived or adapted from previously published material, cite the source(s) here.>		
References	Center for Disease Control; US Census Bureau; International Labor Organization; “Exercise in a pill”—NOVA ScienceNow; “Human eating behavior in an evolutionary ecological context”—Stanley Ulijaszek; “Diet and primate evolution”—Katherine Milton		
Assessment	Since there are many components to this activity and different means to do them, teachers should evaluate them according to their regular practices. Ultimately, each activity builds on the last, and it is important to complete each one accordingly.		