



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
2012 Volume III: Anatomy, Health, and Disease: From the Skeletal System to Cardiovascular Fitness

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## **The Brain, Our Silent Partner: Anatomy and Cognition**

Guide for Curriculum Unit 12.03.02  
by Laura Carroll-Koch

We live in an exciting age, a New Age Renaissance, the Age of Neuroscience, reshaping every facet of society. The forward-thinking cultures of medicine, communication, science, and technology are exploding with new understandings, creating a highly active, dense grid of shared ideas and insights.

This unit is designed to teach students the anatomy and functions of the brain through engaging, hands-on activities that will develop an appreciation and understanding of its elaborately integrated systems. Students will come to understand that they are able to harness these systems and will be encouraged to stretch their once-accepted limits of thinking. An evolutionary journey will highlight the roots of our brain's anatomy, functions, and cognition. Students will construct a clay model of the brain as they learn its anatomy and major functions. A focus on the neuron's functions and structure will develop an understanding of its complex nature. Simulations of neural connections and electrical pathways will help students understand how messages move between neurons and will demonstrate how memories are made and recalled. As students explore memory processing, they will come to understand that these systems collectively produce our ability to think and learn. Creating, evaluating, and analyzing require different cognitive states which can be controlled and changed. With this understanding, students will learn to exercise cognitive flexibility, adapting as necessary to the needs of a particular problem, stretching their mental limits – propelling them forward, as thinkers, innovators, and creators.

(Recommended for Science and Anatomy, grades 4-8)

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