

Rationale

In a world filled with the products of scientific inquiry, scientific literacy is a necessity for everyone in order to use scientific information to make wise choices. Today, the job market demands advanced skills, requiring people to be able to learn new skills, use reason, think creatively, make decisions, and solve problems. An understanding of science and the processes of science contribute in an essential way to these skills.

The Biomedical Sciences Program is a sequence of courses which follows Project Lead the Way's proven hands-on, real-world problem-solving approach to learning. Students explore the prevention, diagnosis and treatment of disease working collaboratively to investigate and design innovative solutions for the health challenges of the 21st century.

Course Description

The student examines the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis. The student designs experiments, investigates the structures and functions of the human body, and uses data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration. Exploring science in action, the student builds organs and tissues on a skeletal manikin, works through interesting real world cases and often plays the role of biomedical professionals to solve medical mysteries. Dual credit is available for this course.

Prerequisites

Principles of Biomedical Sciences with a "C" or higher, and concurrent enrollment in appropriate grade-level science course. Weighted: 0.75

Course Objectives

1. The student will research human body systems and the complex relationships among the systems and explain how the systems work together to maintain homeostasis with 80% accuracy. (A+ Research)
2. The student will identify the anatomical structures associated with each body system and apply the information to identify an unknown's gender, stature, age, ethnicity and general health with 80% accuracy.
3. The student will use current biotechnology to extract, examine, and analyze DNA samples with 80% accuracy. (A+ Reading)
4. The student will communicate their research findings through concept maps, written reviews, and oral presentations with 80% accuracy. (A+ Speaking)
5. The student will predict the effect variables have on the human body system's ability to maintain homeostasis with 80% accuracy.
6. The student will research, evaluate and report on the current medical interventions used in the prevention, diagnosis, treatment and rehabilitation of patients with 80% accuracy. (A+ Writing)

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