

## 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 investigates the variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a "How-To" manual for maintaining overall health and homeostasis in the body as the student explores: how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Through these scenarios, the student is exposed to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics. Lifestyle choices and preventive measures are emphasized throughout the course as well as the important roles scientific thinking and engineering design play in the development of interventions of the future. Dual credit is available for this course.

## Prerequisites

Human Body Systems with a "C" or higher, and concurrent enrollment in appropriate grade-level science course.

Weighted: 0.75

## Course Objectives

1. The student will research, evaluate and report on the history of medical interventions including current technology used in the prevention, diagnosis, treatment and rehabilitation of patients. (A+ Research)
2. The student will read about, describe and discuss the ethical issues related to current medical interventions used in the prevention, diagnosis, treatment and rehabilitation of patients with 80% accuracy. (A+ Reading)
3. The student will use current tools to monitor the health of a fictitious population recording the identifying patterns in the development of illness and design a disease treatment and prevention plan for the population with 80% accuracy. (A+ Writing)
4. The student will design and present blueprints for eight replacement and/or enhancement body parts with 80% accuracy. (A+ Speaking)

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