“As a teacher, I have been totally reinvigorated by this curriculum. One of the best things for me is seeing just how much kids can do when you challenge them to do it. I have no doubt that the kids who go through this program are better off when they get to college and when they get to jobs because they know how to do things for themselves. They have been challenged — they know how to step up and to take different pieces and parts, put them together, and make something new.”

Becky Howell, PLTW Biomedical Science Master Teacher
Lexington Richland School District No 5., Columbia, South Carolina

Preparing Students for the Global Economy

Project Lead The Way (PLTW) is a 501(c)(3) nonprofit organization and the nation’s leading provider of K-12 STEM programs. Through world-class, activity-, project-, and problem-based curriculum, high-quality teacher professional development, and an engaged network of educators and corporate partners, PLTW helps students develop the skills needed to succeed in our global economy.

PLTW courses are aligned with national standards in math and English language arts, Next Generation Science Standards, and CSTA K-12 Computer Science Standards. Courses and units are designed to complement math and science courses, and in some instances, are used as the core curriculum.
PLTW Biomedical Science Curriculum

Foundation Courses

PBS  Principles of Biomedical Science  1 year
In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person’s life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

HBS  Human Body Systems  1 year
Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on MANIKEN® skeletal models; use data acquisition software to monitor body functions, such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

MI  Medical Interventions  1 year
Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through cases, students learn about a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Capstone Course

BI  Biomedical Innovation  1 year
In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent research project with a mentor or advisor from a university, medical facility, or research institution.

Knowledge in biomedical sciences paves the way for a wide range of careers. A small sample of recent graduates who completed at least one PLTW Biomedical Science™ course reveals the array of opportunities: some students pursued post-secondary studies in microbiology, pharmacy, chemistry, nursing, nutrition and dietetics, or neurobiology; others enrolled in medical or dental school; and others began careers in forensic science or started research projects focused on immunology and cancer. These careers are personally and professionally rewarding. They are also challenging and require a deep understanding of how to apply science, technology, engineering, and math (STEM) to solve complex problems.

How do we prepare students to investigate medical cases, understand treatment and intervention options, and seek solutions to the world’s biggest health challenges?