



Principles of Biomedical Science *(1 year)*

In this course, students explore concepts of biology and medicine as they take on roles of different medical professionals to solve real-world problems. Over the course of the year, students are challenged in various scenarios including investigating a crime scene to solve a mystery, diagnosing and proposing treatment to patients in a family medical practice, to tracking down and containing a medical outbreak at a local hospital, stabilizing a patient during an emergency, and collaborating with others to design solutions to local and global medical problems.

Human Body Systems *(1 year)*

Students experience real-world scenarios and cases to see medicine in action – as they diagnose and provide treatment and rehabilitation to patients at an outpatient center, keep clients safe and healthy on adventure medicine trips in remote locations, work in a research center to design laboratory investigations to explore development and aging, and design interactive elements to bring patient perspectives to an immersive science exhibit. Exploring science in action, students build organs and tissues on a skeletal model, 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 problems.

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 real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

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 project with a mentor or advisor from a university, medical facility, or research institution.

PLTW Capstone *(1 year)*

Students engage in an open-ended research experience in the PLTW Capstone course, a culminating program for those completing PLTW's high school offerings. They collaborate in teams, designing and developing original solutions to well-defined and justified real-world problems.