

What is it?

The PLTW Biomedical Sciences Program is a sequence of four courses which follow the PLTW Engineering Program's proven hands-on, real-world, problem-solving approach to learning. Students explore the concepts of human medicine and are introduced to bioinformatics, including mapping and analyzing DNA. Through activities, like dissecting a heart, students examine the processes, structures and interactions of the human body – often playing the role of biomedical professionals to solve mysteries. Think CSI meets ER. They also explore the prevention, diagnosis and treatment of diseases working collaboratively to investigate and design innovative solutions for the health challenges of the 21st century such as fighting cancer with nanotechnology. PLTW



What to Expect?

"Biomedical helped with planning my future career and learning the basics of forensic science and biomedical science. Biomedical has been fun to learn about the crime of Anna's death and breaking down from a medical perspective." ~PBS Student

"I'd describe this biomedical pathway experience has a new challenge because everyday there is something new to learn. One class day, you may walk into a crime scene or you may walk into class and see a centrifuge spinning pretend blood." ~PBS Student

"Amazing hands-on working experiences. The way we learn is by doing hands-on labs instead of memorizing. It makes the class more fun and easier to learn by seeing how things work in the body and how it happens." ~HBS Student

"I would say that this is one of the best programs Tustin High has to offer. I have learned so much and had a lot of hands on experience. There is never a day when you won't learn something new." ~HBS Student



@THSBIOMEDCLUB

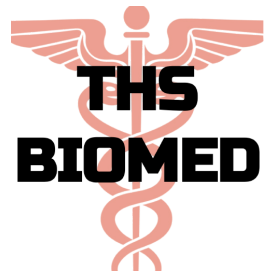


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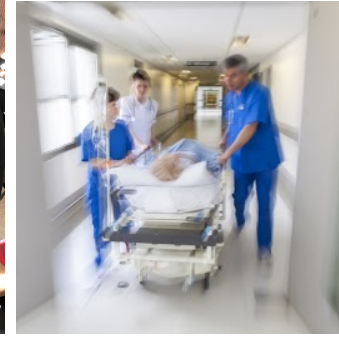
TUSTIN HIGH SCHOOL BIOMEDICAL PATHWAY



Pathway Curriculum

PBS Principles of Biomedical Sciences

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

Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis in the body. Exploring science in action, students build organs and tissues on a skeletal Maniken®; 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

In Medical Interventions 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. Students will learn and practice leadership skills through collaboration, critical thinking, and self-led projects. Project based learning supports the development and application of leadership skills.

BI Biomedical Innovations

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.