

PROJECT LEAD THE WAY (PLTW) BIOMEDICAL SCIENCES ACADEMY Curriculum Information

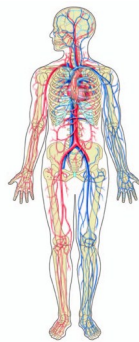
BIOMEDICAL SCIENCES ACADEMY PROGRAM GOAL

The goal of the PLTW Biomedical Sciences (BMS) Program is to provide a sequence of courses, all aligned with appropriate national learning standards, which follows a proven hands-on, real-world problem-solving approach to learning.



Students explore the concepts of human medicine and are introduced to topics such as physiology, genetics, microbiology and public health. Through activities, like dissection and experimentation, students examine the processes, structures and interactions of the human body. They also explore the prevention, diagnosis and treatment of disease. Students work collaboratively to investigate and design innovative solutions to the health challenges like fighting cancer with nanotechnology.

Foundation Courses



**Grades 9/10:
PLTW Principles
of the Biomedical
Sciences - Honors**
Students investigate various health conditions including heart disease, diabetes, sickle-cell disease and infectious diseases. They determine the

factors that led to the death of a fictional person and investigate lifestyle choices and medical treatments that might have prolonged the person's life. Activities and projects introduce students to human physiology, medicine and research processes.

Grades 10-12: PLTW Human Body Systems - Honors

Students examine the interactions of the human body. They use data acquisition software to monitor body functions such as muscle



movement, reflex and voluntary action, and respiration. Exploring science in action, students build organs and tissues on a skeletal manikin, work through interesting real world cases and often play the roles of biomedical professionals to solve medical mysteries.

Grade 11: PLTW Medical Interventions - Honors

Students investigate a variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the life of a fictitious family. The course is a "How-To" manual for maintaining overall health and homeostasis in the body. Students explore how to prevent and fight infection; screen and evaluate the code in human DNA; prevent, diagnose and treat cancer. Students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Work-based Learning Opportunities

Partnerships with the business community have been developed to allow qualified students in the Biomedical Sciences Academy to participate in job shadowing, internship or cooperative learning experiences.

Capstone Course

Grade 12: PLTW Biomedical Innovation - Honors

Students design innovative solutions for the health challenges of the 21st century. They work through progressively challenging open-ended problems, addressing topics such as clinical medicine, public health, physiology and biomedical engineering. They have the opportunity to work on an independent project and may work with a mentor in the healthcare industry. *Students are encouraged to present their work to an audience of STEM professionals.*

College Advantage

Whether a student plans to attend a four-year university or two year associate program CATA offers all the required subjects necessary for post-secondary education. Many required courses in the Biomedical Sciences Academy carry honors credit. Advanced Placement (AP) opportunities also exist within the core curriculum. Successful completion of Honors and/or AP courses can boost a student's GPA.

Career and Technical Student Organization



HOSA's twofold mission is to promote career opportunities in the health care industry and to enhance the delivery of quality health care to all people. Participation in HOSA provides students with the critical soft-skills development that is essential in the 21st century employee.

CENTRAL ACADEMY OF TECHNOLOGY & ARTS



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For Additional Information
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See reverse side for
Suggested/Required
Courses

