Upon completing the program students will be able to:

- Discuss the education requirements and job responsibilities of multiple careers in the Biomedical Sciences including biotechnology, bioengineering, and healthcare.
- Conduct research using valid sources from the Internet or library.
- Design and conduct well-controlled scientific experiments.
- Analyze and effectively present data experiments.
- Write lab reports, research summaries, and modify grant proposals.
- Discuss how societal attitudes affect the development and use of medical interventions.
- And much more...

Cecil County Public Schools does not discriminate in admissions, access, treatment or employment in its programs and activities on the basis of race, color, gender, age, national origin, religion, sexual orientation, or disabling condition.

Students from the five county high schools have the opportunity to begin programs during their junior year by a designated application process. Students will complete their programs during their senior year.

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Project Lead The Way-Biomedical Sciences

This program allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. Students engage in activities such as investigating the death of a fictional person to learn content in the context of real-world cases. They examine the structures and interactions of human body systems and explore the prevention, diagnosis, and treatment of disease, while working collaboratively to understand and design solutions to the most pressing health challenges of today and the future.

Students who complete the program are prepared for further education at two- and four-year college levels. Stevenson University, the Maryland PLTW Biomedical Sciences Affiliate University, will offer four (4) transcripted credits for its first semester majors biology course (BIO 113). The credit will be offered for those students who complete the entire PLTW biomed sequence of courses and score at least 80% on each end-of-course assessment.

Courses in the program

Principles of Biomedical Science - in this course 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 process, while allowing them to design their own experiments to solve problems.

Human Body Systems - 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.

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 cases, students learn about a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Biomedical Innovation - students build on the knowledge and skills gained from previous courses to design innovate 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.

College Credit—The following colleges and universities also offer credit for PLTW Biomedical Sciences:

- Augustana College
  [http://www.augie.edu/project-lead-way](http://www.augie.edu/project-lead-way)
- Indiana University – Purdue University Indianapolis (IUPUI)
  [http://science.iupui.edu/community/projectleadway](http://science.iupui.edu/community/projectleadway)
- Missouri University of Science and Technology
  [http://pltw.mst.edu/](http://pltw.mst.edu/)
- University of Colorado at Colorado Springs (UCCS)
  [http://www.uccs.edu/pltw/students.html](http://www.uccs.edu/pltw/students.html)

Potential Careers

- Doctor, Nurse, Dentist, Veterinarian, Veterinarian Assistant, Pharmacist, Research Scientist, Biomedical Engineer, Dietician, Paramedic, Health Information Manager, Medical Technologist, Radiologist, Medical Technical Writer, Physician Assistant, Medical Assistant, Biotechnology/Biomanufacturing Lab Technician, Geneticist

Cecil County School of Technology

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