



# NEW FOR THE 2020-2021 SCHOOL YEAR

# PROJECT LEAD THE WAY

## PRINCIPLES OF BIOMEDICAL SCIENCE

### THE PROGRAM

Whether discovering new cancer treatments or teaching healthy lifestyle choices to their communities, today's biomedical science professionals are tackling big challenges to make the world a better place. Project Lead The Way (PLTW) Biomedical Science students take on these same real-world challenges in their high school science classrooms.

As part of the Biomedical Science program, students will engage in compelling, hands-on activities and work together to find solutions to problems. Students in the Biomedical Science program will learn knowledge and skills in biomedical science as well as in-demand, transportable skills like problem solving, critical and creative thinking, communication, and collaboration that they will use in high school and for the rest of their lives, on any career path they take.

### STUDENT-CENTERED, BALANCED ASSESSMENT

PLTW supports a balanced approach to assessment, integrating both formative and summative assessments that allow teachers to monitor student progress and modify instruction as needed. Through a balanced assessment approach, assessment is an ongoing activity. Students demonstrate their knowledge throughout the course by completing activities, projects, and problems using a variety of assessment tools – such as performance rubrics, reflective questioning, and End-of-Course (EOC) assessments – to deepen and expand their knowledge and skills.

PLTW students show what they've learned by completing classroom activities, projects, and problems; maintaining logs, notebooks, and portfolios that undergo assessment; and evaluating work through a range of tools, such as performance rubrics and reflective questioning, to deepen and expand their knowledge and skills. The End-of-Course (EOC) assessment offers students a way to prove their strengths and showcase their potential to teachers, higher education institutions, and employers.

### AT ASSUMPTION

Assumption freshmen will merge their study of biology and Project Lead The Way's Principles of Biomedical Science course for an engaging and challenging approach to the study of biological sciences. Students opting to take this course will open doors to additional Project Lead The Way courses throughout their Assumption careers.

Project Lead The Way's mission fits perfectly with Assumption's philosophy of learning. By immersing students in activities like practicing suturing and constructing body structures from clay, PLTW Biomedical Science equips students with knowledge and skills that will allow them to address the challenges of the future.

### Laboratory Skills

- Aseptic technique
- Bacterial plating and identification
- Gram staining
- Micropipetting
- DNA gel electrophoresis

### Clinical Skills

- Blood pressure measurement and analysis
- EKG analysis
- Pedigree analysis
- Bloodwork analysis

### Equipment and Software Proficiencies

- Microsoft Office (Excel, Word, PowerPoint)
- Vernier probes and sensors
- Data acquisition software (Vernier Logger Pro)
- Microscope

### Scientific Experimentation Skills

- Design and conduct reliable scientific experiments
- Analyze and interpret laboratory data
- Construct graphs (by hand and with graphing software)
- Interpolate and extrapolate data from a graph
- Draw conclusions based on experimental data
- Thoroughly and clearly communicate results and conclusions both orally and in writing

### Professional Skills

- Group collaboration
- Planning and organizing
- Time management
- Problemsolving
- Technical writing
- Verbal and written communication
- Decisionmaking
- Creative thinking

Learn more about Project Lead The Way at [www.pltw.org](http://www.pltw.org).