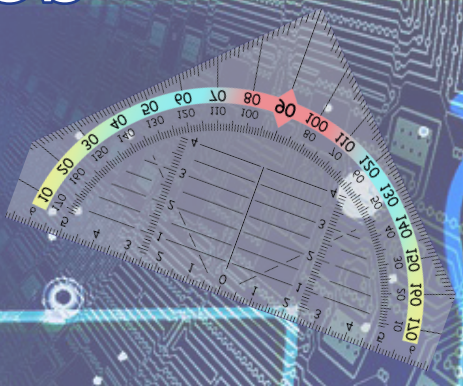
Pemberton Township High School
STEM Academy

Science

Technology

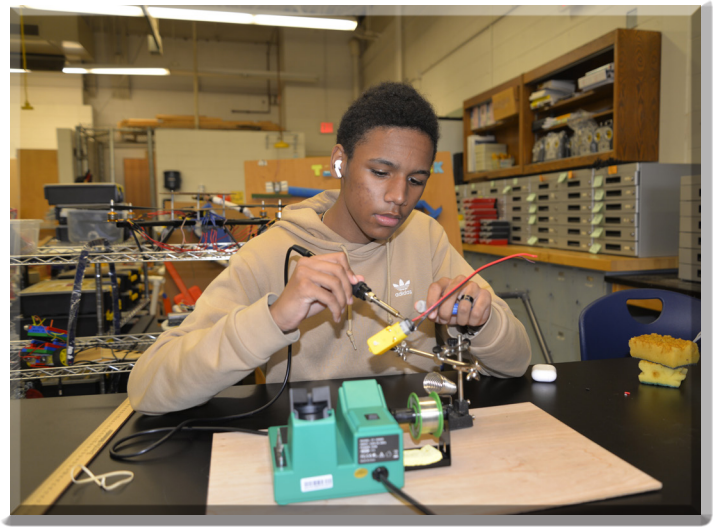
Engineering

Mathematics



Pemberton Learning Community:
Pursuing Excellence One Child at a Time

Pemberton Township High School
STEM Academy
Science, Technology, Engineering and Mathematics



It is the expressed mission of the Pemberton Township High School STEM Academy to provide motivated students with a specialized, yet comprehensive high school education that meets or exceeds the New Jersey Core Curriculum Standards as it prepares students for success in STEM related career fields. A full range of STEM opportunities will be explored as students pursue the wide variety of coursework provided by the program.

The program includes summer enrichment programs, design experiences, mentoring, job shadowing, work study opportunities, and opportunities for volunteer experiences in addition to career-related coursework and the opportunity to earn college credits while still in high school.

The program will create multiple career pathways that will enable students to develop the skills and knowledge base needed to successfully transition from high school to college and a career in the sciences and engineering fields. The program accomplishes this by providing coursework and experiences that prepare students for early career exploration and preparation for the full range of STEM-based career opportunities.

"Technology has advanced more in the last thirty years than in the previous two thousand. The exponential increase in advancement will only continue."

—Niels Bohr, Physicist

Philosophy and Goals

Students in the PTHS STEM Academy are encouraged to progress at their own pace, exploring, investigating, and taking responsibility for their learning. As they begin to recognize their area of interest and skills, staff members provide full support for their endeavors, enabling them to achieve and excel.

The Goals of the STEM Program are to:

- **Provide the knowledge, skills, and experiences in high school that provide an excellent foundation to pursue STEM related careers.**
- **Provide opportunities for STEM career awareness (speakers, job shadowing, career days, internships).**
- **Allow students to tailor their course sequences based on individual interests and still provide the core courses necessary for students to get an excellent background in all STEM fields.**
- **Provide the support of a cohort of students and teachers in the core courses throughout their high school career.**

Providing Hands-On Experience and Projects

The emphasis throughout the STEM program is on giving students hands-on experience and allowing them to learn through doing. During the junior and senior years, the course sequence provides flexibility for students to take additional science, technology, engineering, or mathematics courses that suit their individual interests.

Key Highlights of the STEM Course Sequence Include:

Science – Physics, Chemistry, Biology (all honors), AP Physics and/or AP STEM Science Electives

Technology – Java I or AP Computer Science Principles

Mathematics – Algebra II, Geometry, Pre-Calculus, (all honors), AP Calculus and/or AP A-STEM Math Electives

Engineering – Engineering I, II, III & IV (Senior Project/Internship)

Each engineering honors level course is a hands-on, project-based experience where students develop working projects of increasing complexity involving several fields of science and technology. Access is provided to a broad range of the latest software tools and technologies. As students progress, projects are geared to each student's areas of interest.

By junior and senior year, students are encouraged to focus on two main areas of interest and choose their courses accordingly. During senior year, if selected, students will use their excellent foundation to participate in an internship or senior project of his or her choice.

The course sequence below serves as a guideline. Students have the option to accelerate within the sequence, with prior approval.

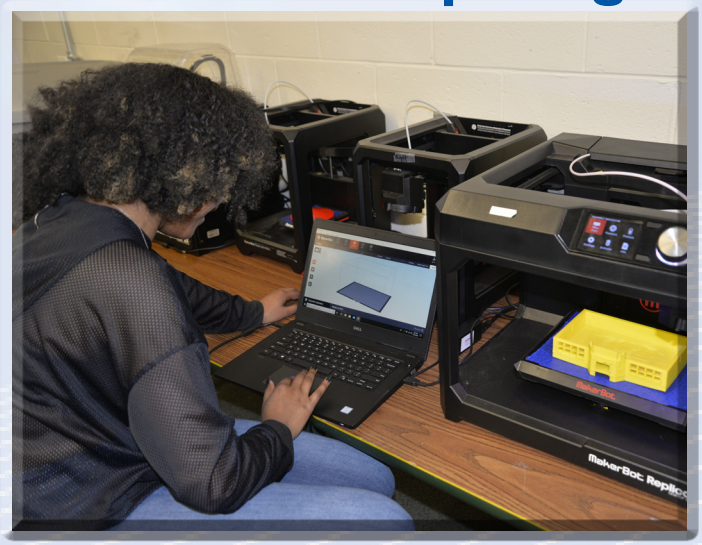
STEM Academy Course Sequence

Grade 9	Grade 10	Grade 11	Grade 12
English I or English Honors	English II or English Honors	English III or English Honors	English IV or English Honors
Physics Honors	Chemistry Honors	Biology Honors	AP Physics or AP STEM Science Elective
Algebra II Honors	Geometry Honors	Pre-Calculus Honors	AP Calculus
AP Computer Science Principles	Java I	AP STEM Elective	Elective
World History	US History I	US History II	
World Language	World Language		
Health/PE	Health/PE	Health/PE	Health/PE
Lunch/Band/Chorus/ AVID/JROTC	Lunch/Band/Chorus/ AVID/JROTC	Lunch/Band/Chorus/ AVID/JROTC	Lunch/Band/Chorus/ AVID/JROTC
Engineering I	Engineering II	Engineering III or AP STEM Elective	Engineering IV or STEM Internship

"The important thing is to not stop questioning."

~Albert Einstein

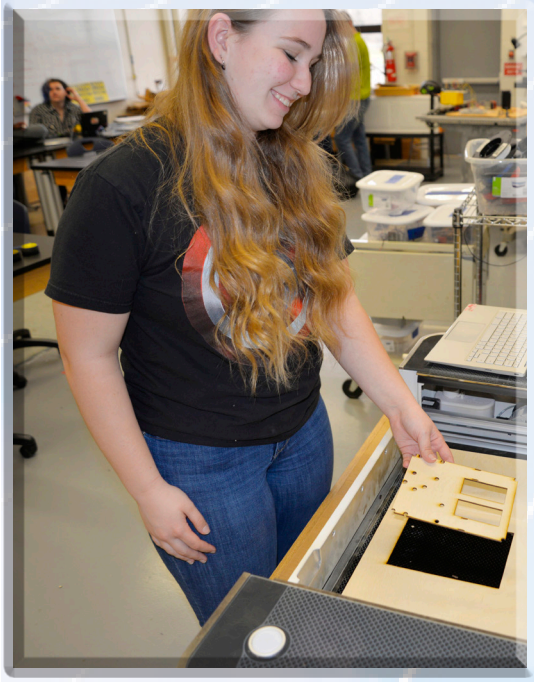
Preparing for the Future



Students in the STEM Academy will learn software tools and have access to technology that the professionals use, including:

- Web-based Design Collaboration (Discussions Forums, Google Docs, LiquidPlanner)
- Software Tools (Autodesk Inventor, 123D Design, Arduino IDE, Eclipse IDE, Xmind)
- Electronic Circuit Design, Programming Embedded Systems (Arduino, Raspberry Pi, Propeller)
- Cost Benefit Trade-off Analysis Skills, Perform Technology Area Market Surveys
- Engineering Design Review Process Skills, Communication/Presentation Skills

"One learns by doing a thing; for though you think you know it, you have no certainty until you try." ***~ Sophocles***



Discover
Create
Design
Explore

For more information on the STEM Academy, please contact the PTHS Counseling Center at 609-893-8141, ext. 1088.

PTS

You can get there from here!