



BotsIQ

BOTSIQ

**DEVELOPING
MANUFACTURING'S
FUTURE WORKFORCE**



BotsIQ is a youth workforce development program of the Pittsburgh Chapter National Tooling & Machining Foundation that was created by manufacturers to solve its biggest issue: **recruiting a skilled workforce.**

Through BotsIQ, quality STEM and robotics programming is offered year-round to students at public and private schools, homeschools, and qualified youth organizations across southwestern Pennsylvania—free of charge.

10,000+ students impacted by BotsIQ's programs



---HANDS-ON LEARNING---

COMBAT ROBOTICS

Launched in **2005**, this is BotsIQ's signature high school program. BotsIQ students partner with industry professionals to experience the entire engineering and manufacturing process, including **Computer-Aided Design, fabrication, machining, welding, and electrical engineering**, as their team creates a 15-pound combat robot.



In addition to technical skills, BotsIQ students also report developing many 21st century skills including project management, teamwork, leadership, problem solving, and critical thinking.

COBOT CHALLENGE

Middle school students engage in a unique challenge as they create a collaborative robotic solution to solve an everyday problem. The students assemble a kit to create the main section of the robotic arm, design and manufacture an end-effector, or hand, and program the arm to carry out the function(s) for its task. The BotsIQ Cobot Challenge introduces students to four technical skills: **mechanical engineering and Computer-Aided Design, electrical engineering and electronics, computer science and programming, and fabrication with machining and 3-D printing.**



---TECHNICAL TRAINING---



BOTSIQ ACADEMY

Students are provided an extra opportunity to increase their technical knowledge through BotsIQ's advanced online curriculum in BotsIQ Academy. Launched in **2018** and offered at no cost to the school or student, BotsIQ Academy utilizes online educational platforms such as Tooling U-SME, SolidProfessor, and Mastercam University, to deliver industry-based curriculum in areas such as **basic measurement and math, blueprint reading, safety, and Computer-Aided Design.**

ACQUIRED SKILLS AND COMPETENCIES



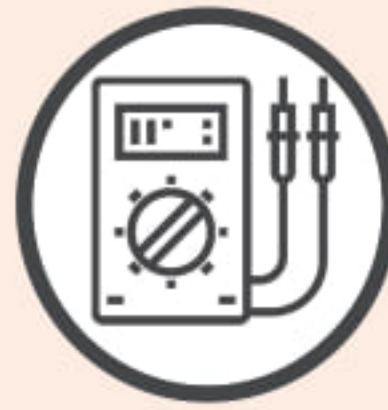
SAFETY



MATH &
MEASUREMENT



MANUFACTURING



ELECTRONICS



ROBOTICS



CAREER READY

ROBOTICS TECHNICIAN PRE-APPRENTICESHIP

BotsIQ offers students an opportunity to gain real-world technical skills needed for employment in advanced manufacturing and robotics through its Pennsylvania State Registered Robotics Technician Pre-Apprenticeship. BotsIQ's industry-based classes provide a **strong foundation of knowledge** that is supplemented with **hands-on projects** and **career-related experiences**. Students who successfully complete BotsIQ's Pre-Apprenticeship are eligible for advanced placement in regional apprenticeship programs and receive college credits at local post-secondary institutions.





- CAREER EXPLORATION AND MORE!

Every BotsIQ school is connected with a manufacturing company in its community where students tour the facility and interview at least one STEM professional.

CLOSE THE LOOP

BotsIQ's Close the Loop program provides **academic, career exploration, and employment opportunities** for students interested in a career in advanced manufacturing or robotics. Every student creates an **individual career plan** that identifies opportunities for real-world learning experiences. BotsIQ Close the Loop specifically supports students with barriers to employment.



BotsIQ was a major influence in how I chose to pursue engineering after high school. It not only gave me an outlet to use STEM skills that weren't really used in other classes, but also introduced me to countless engineering skills and concepts that I still apply to my courses today.

- Madison H.

ADDITIONAL RESOURCES:

BotsIQ is focused on the importance of engaging the next generation of manufacturing and STEM leaders through exciting educational programming. In addition to its core programs, BotsIQ provides resources to support educators and students, such as the **BotsIQ Lending Library, a summer manufacturing internship program, teacher professional development, and hands-on training workshops.** New opportunities are always being created -- connect with BotsIQ to learn more!

