PHILADELPHIA ACADEMY

STEM FUTURES
THE LEADERSHIP & WORKFORCE ACADEMY FOR JROTC

CADET IMPACT REPORT 2025

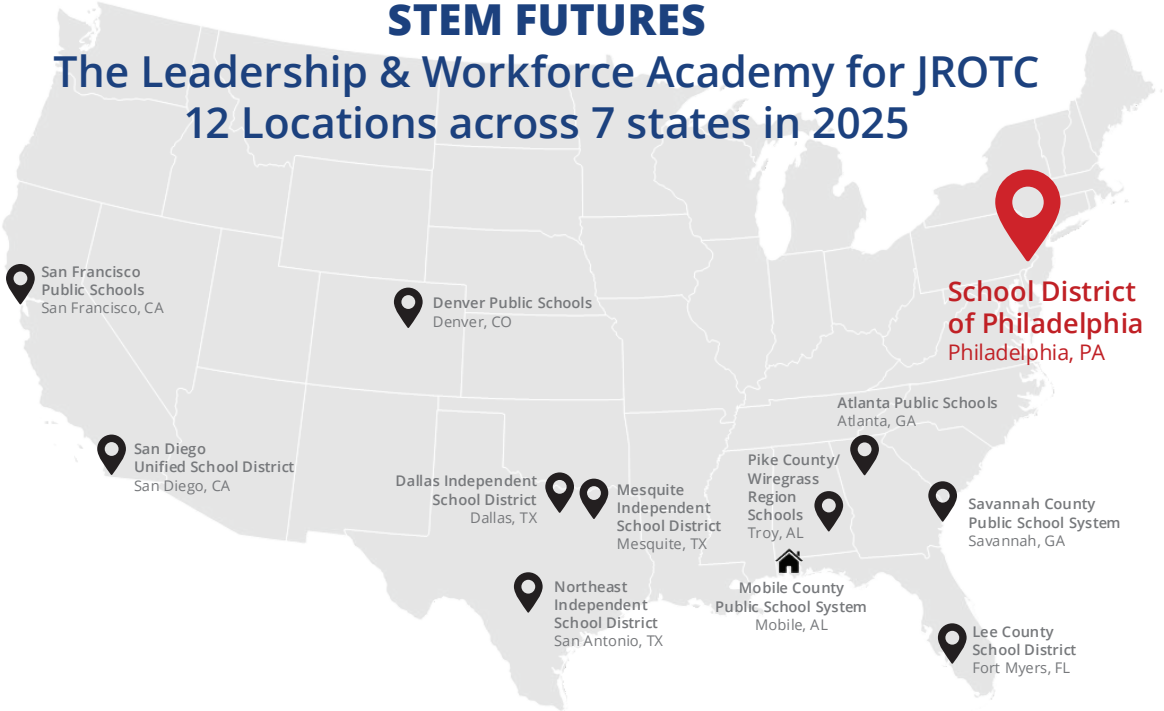
STEM FUTURES: The Leadership & Workforce Academy for JROTC is a week-long residential summer camp that helps meet today's workforce needs by engaging high school students—rising 9th-12th grade JROTC Cadets—in activities that open pathways to STEM learning and careers.

The Academy seeks to increase Cadets' awareness of local high-paying, in-demand STEM career opportunities and their understanding of what it takes to secure these jobs. To do this, the Academy integrates activities aimed at informing JROTC Cadets about STEM jobs, piquing their interest to pursue these jobs, giving them hands-on application of STEM concepts in a team setting, and developing 21st century workforce skills.

The 2025 Philadelphia Academy took place at Resica Falls Boys Scout Camp in East Stroudsburg, Pennsylvania. The focus of this Academy was on introducing Cadets to block-based coding that controlled the distance traveled by a small, wheeled robot they built.

9 HIGH SCHOOLS | **109** CADETS

STEM FUTURES
The Leadership & Workforce Academy for JROTC
12 Locations across 7 states in 2025



INTEGRATED ACTIVITIES

- Team STEM Activities
- Workplace Visits
- JROTC Cadet Leadership Challenges
- Inspirational Guest Speakers

How did Cadets respond to teamwork experiences?

Our team used different techniques to build and complete the mission, working together to accomplish the goal.

RISING 12TH GRADER
PHILADELPHIA MILITARY ACADEMY
2025 PHILADELPHIA ACADEMY

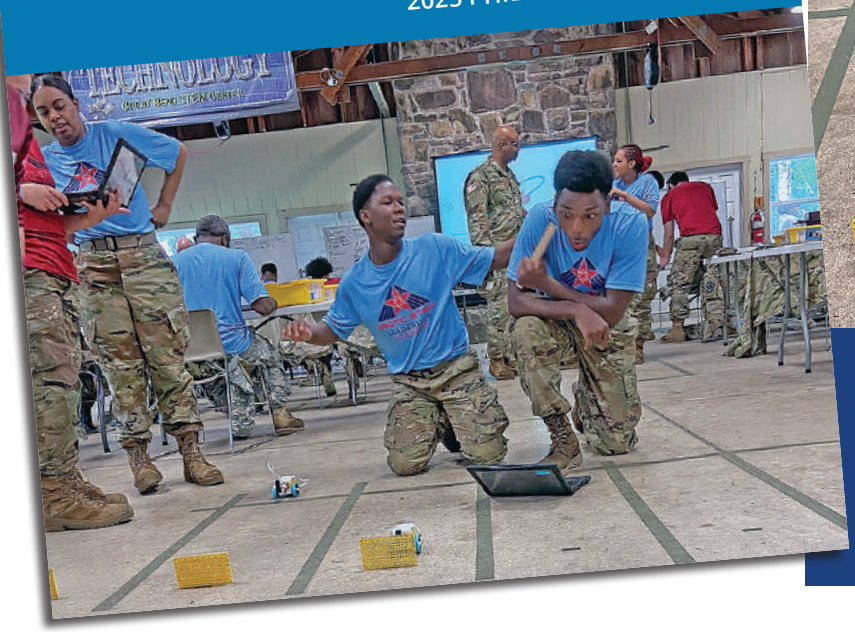
STEM Futures: The Leadership Academy for JROTC engaged Cadets in developing and valuing teamwork, communications, and leadership skills needed to be successful contributors and collaborators. Carefully structured activities designed to do this included team building, STEM activities, fitness challenges, and team sports.

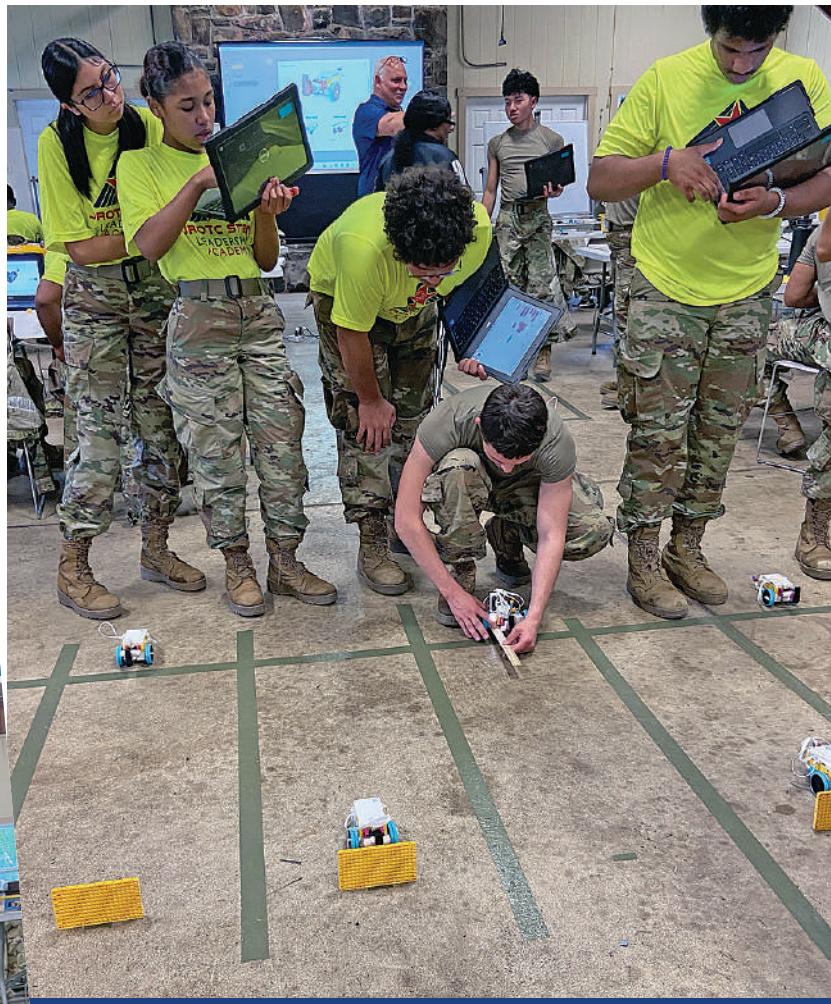
Team STEM Activities

Cadets at the 2025 Philadelphia Academy used LEGO Spike Prime kits to construct a basic program using block-based coding to operate a wheeled LEGO robot they built. After learning how to use the Spike Prime app, Cadets incorporated IF/THEN and REPEAT statements and added a force sensor to the code, allowing the robot's Smart Hub to control the distance the robot traveled and to stop it. Cadets tested their robots in a 1.2-meter competition, with the winner being the team who programmed their robot to get closest to an object placed at that distance without touching it.

I liked the STEM this year because I like being active, not just physically but in my mind to learn new things.

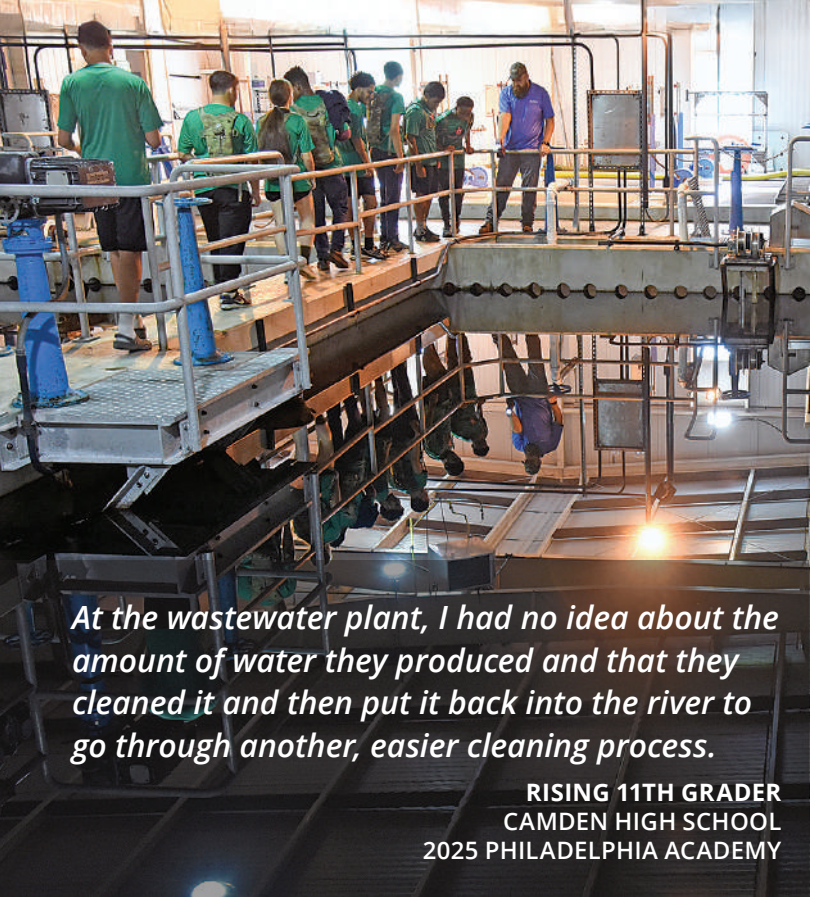
RISING 10TH GRADER
NORRISTOWN AREA HIGH SCHOOL
2025 PHILADELPHIA ACADEMY





The knowledge I acquired during STEM helped advance my critical thinking skills

RISING 11TH GRADER
CAMDEN HIGH SCHOOL
2025 PHILADELPHIA ACADEMY



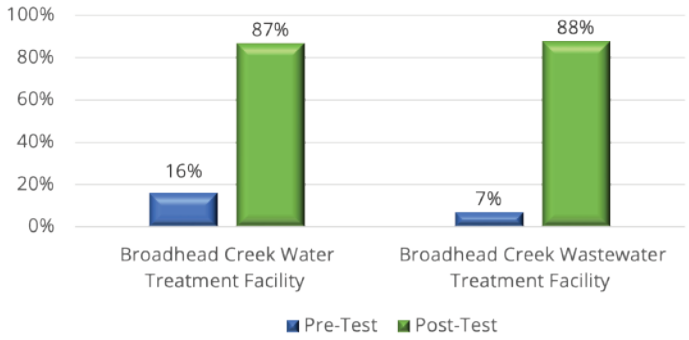
At the wastewater plant, I had no idea about the amount of water they produced and that they cleaned it and then put it back into the river to go through another, easier cleaning process.

RISING 11TH GRADER
CAMDEN HIGH SCHOOL
2025 PHILADELPHIA ACADEMY

Workplace Visits

To raise Cadets' awareness of how STEM is used in local industries, the 2025 Philadelphia Academy arranged visits to the Broadhead Creek Water Treatment Facility and to the Broadhead Creek Wastewater Treatment Facility. Cadets interacted with engineers, technicians, and other professionals who talked about their work, hiring requirements, traits and skills needed, training offered, and salaries for local, high-demand STEM jobs.

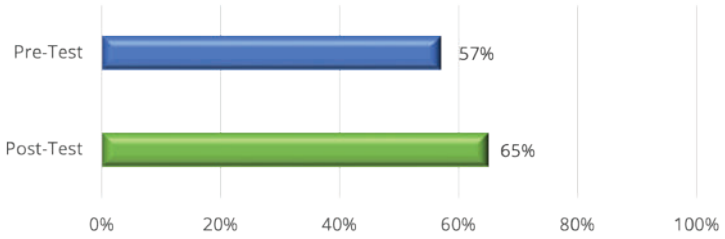
2025 PHILADELPHIA ACADEMY CADETS ABLE TO DESCRIBE WORKPLACES VISITED



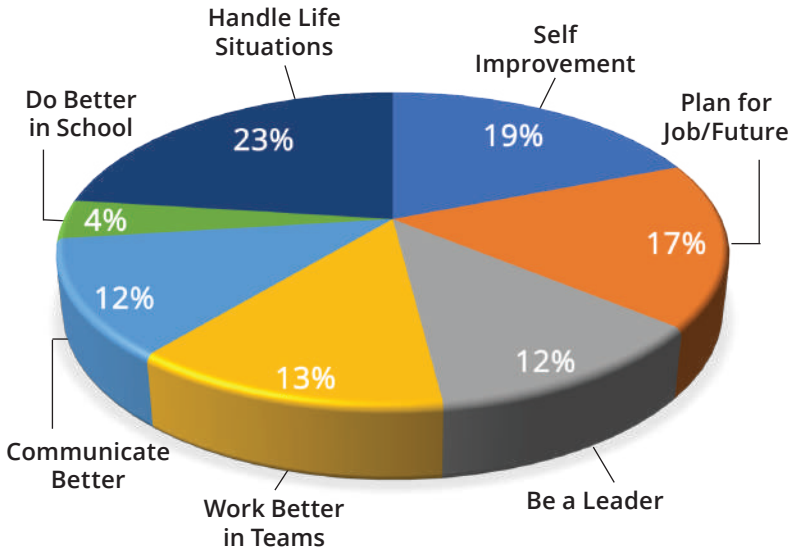
Educational Experiences

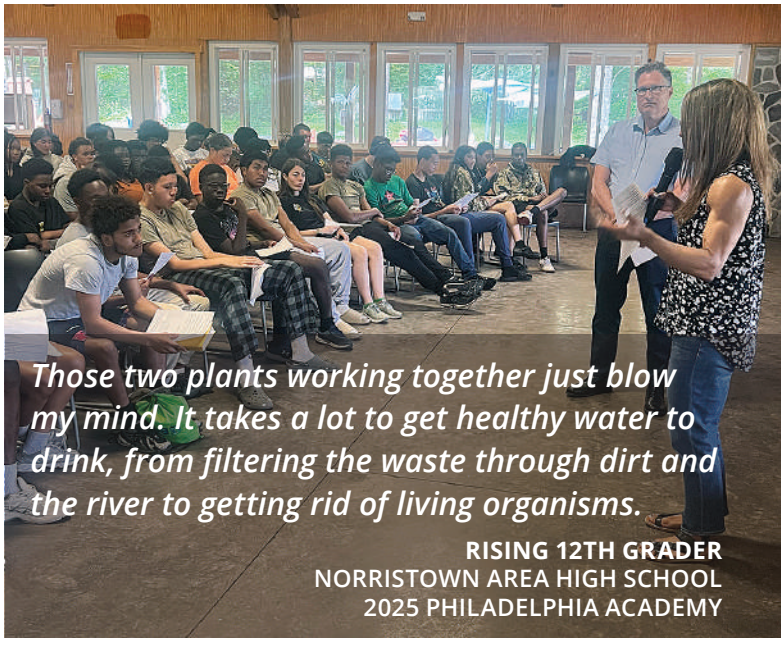
Cadets at the 2025 Philadelphia Academy participated in a radio wave exploration activity led by an instructor at the Resica Falls Boy Scout Camp. Cadets also heard from two special guests who visited the Academy: Mr. Eric Hardaway, former Representative for Philadelphia's Third Congressional District, and Philadelphia Military Academy's Principal Kristian Ali and her administrative team.

2025 PHILADELPHIA CADETS AWARE OF LOCAL, GOOD-PAYING STEM JOBS



HOW WILL 2025 PHILADELPHIA CADETS USE ACADEMY EXPERIENCES IN THE FUTURE?





Those two plants working together just blow my mind. It takes a lot to get healthy water to drink, from filtering the waste through dirt and the river to getting rid of living organisms.

RISING 12TH GRADER
NORRISTOWN AREA HIGH SCHOOL
2025 PHILADELPHIA ACADEMY

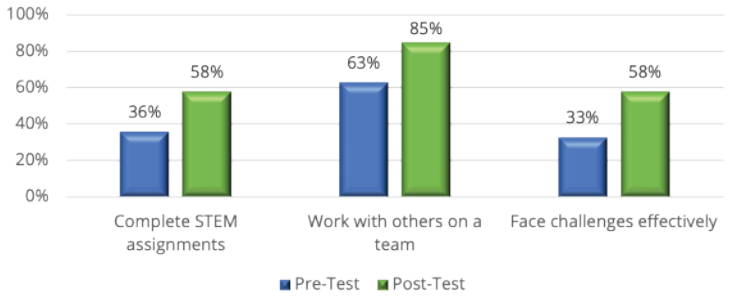
This camp is teaching me things I didn't know about myself, like how I can be scared to do rock climbing but then actually go through with it once I clear my mind.

RISING 11TH GRADER
PHILADELPHIA MILITARY ACADEMY
2025 PHILADELPHIA ACADEMY

JROTC Cadet Leadership Challenges

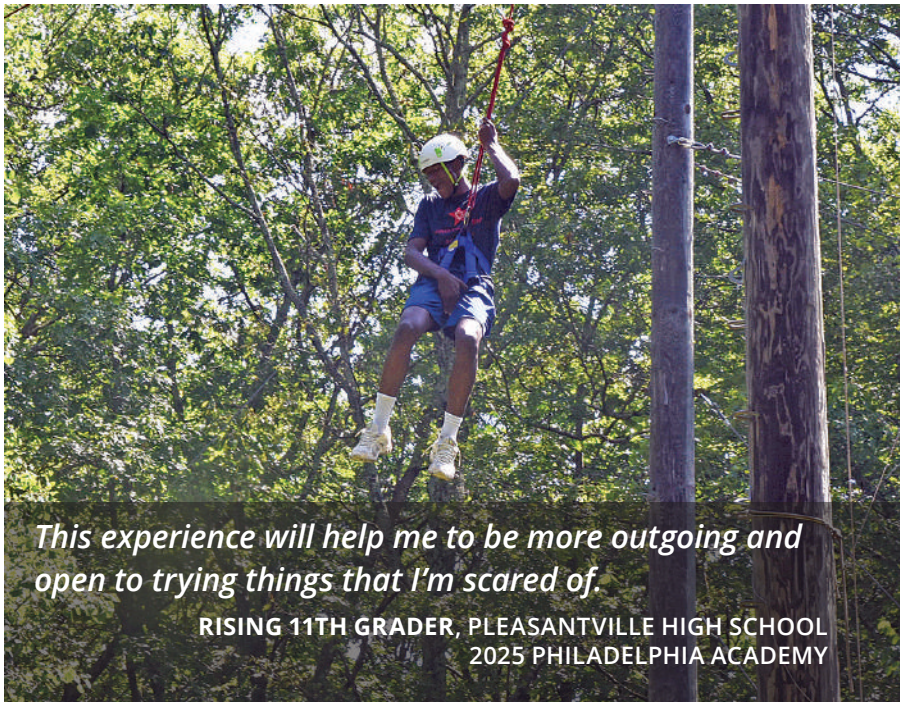
The foundation of the Academy lies in the JROTC culture and character education curriculum. Cadets who attended the Academy received additional exposure to the curriculum and culture by participating in JROTC Cadet Leadership Challenge (JCLC) activities, such as rappelling, archery, rock climbing, wilderness survival, rappelling, land navigation, and high ropes/ obstacle courses. Cadets consider JCLC activities a highlight of the camp that engages them physically while building personal confidence and team camaraderie. Combining JCLC activities and STEM design challenges resulted in linked experiences that build academic, team, and leadership skills, while promoting self-improvement.

2025 PHILADELPHIA ACADEMY CADETS' BELIEFS IN THEIR ABILITY TO...



Overall Conclusions

Based on the analysis of quantitative and qualitative data collected, the **2025 Philadelphia STEM FUTURES: The Leadership & Workforce Academy for JROTC** increased Cadets' awareness of and interest in local STEM career opportunities and increased their confidence to pursue STEM learning and careers. Cadets were introduced to math, science, engineering, and technology concepts and applied those concepts during a hands-on activity. Cadets gained skills in teamwork, leadership, communication, and other 21st century workforce skills and experienced growth in social skills, confidence, and productivity. All combined, the Academy provided experiences that opened pathways to STEM learning and careers.



This experience will help me to be more outgoing and open to trying things that I'm scared of.

RISING 11TH GRADER, PLEASANTVILLE HIGH SCHOOL
2025 PHILADELPHIA ACADEMY

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