STEM FUTURES
THE LEADERSHIP & WORKFORCE ACADEMY FOR JROTC

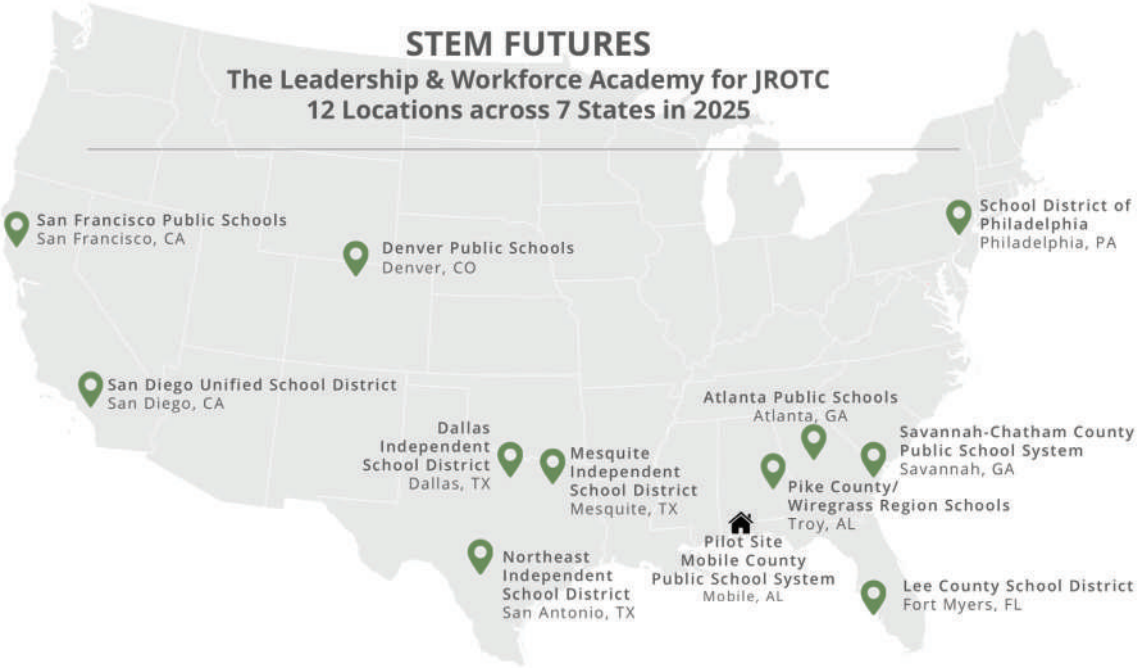
CADET IMPACT REPORT 2025

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 about 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 Academies featured two industry-themed STEM curricula, STEM-in-the-Water (maritime) and STEM-on-the-Ground (advanced manufacturing). In both curricula, Cadets designed and built functional robots and completed multiple missions with increasing complexity.

In 2025, there were 12 Academies implemented at locations in Alabama, California, Colorado, Florida, Georgia, Pennsylvania, and Texas.



INTEGRATED ACTIVITIES

- STEM Design Challenges
- Visits to Workplaces and Universities
- JROTC Cadet Leadership Challenges
- Inspirational Guest Speakers

How did Cadets respond to teamwork experiences?

I handle others' opinions better than I did earlier this week. During mission 1, I was very stubborn on my ideas. But on missions 2 and 3, I was more open. This experience will help me be more open to other ideas in the classroom and lead a team.

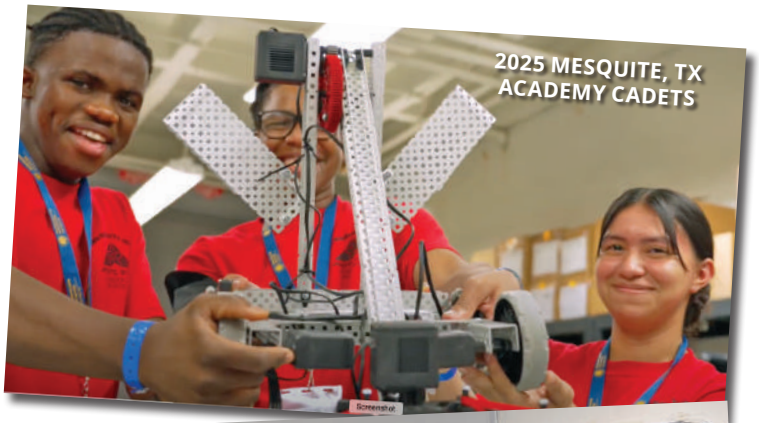
—RISING 10TH GRADER, ROBERSDALE **HIGH SCHOOL**
2025 PIKE COUNTY-WIREGRASS REGION ACADEMY IN ALABAMA

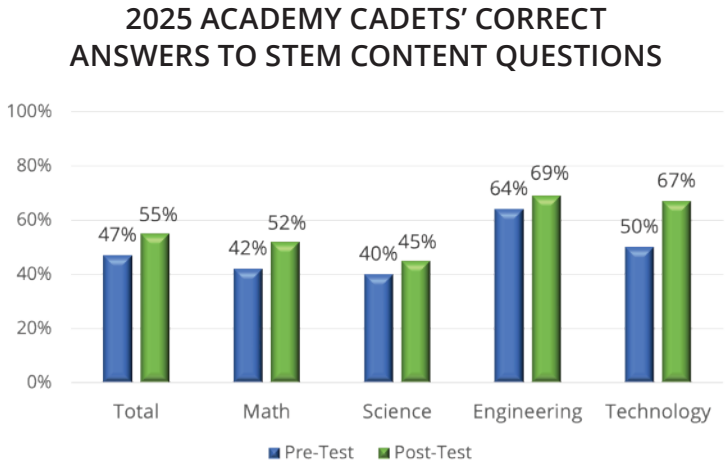
STEM FUTURES: The Leadership Academy for JROTC engaged Cadets in developing and valuing teamwork, communication, and leadership skills needed to be successful contributors and collaborators. Carefully structured activities designed to do this included:

- Winning Colors® Personality Assessment
- Team Building Activities
- STEM Design Challenges
- JROTC Fitness Challenges and Sports Nights
- Team Poster Presentations

Team STEM Design Challenges

Academy Cadets using the maritime-themed curriculum applied principles of center of mass, Newton's third law, and coding. Cadets using the advanced manufacturing-themed curriculum applied principles of simple and complex machines, gears and gear ratios, and inverse relationships. Both groups designed and built operational robots to meet increasingly complex challenges, conducted trial and error analysis using the engineering design process, and explained their process and results to visitors and peers at poster presentations. Pre- and post-assessments showed that Cadets achieved statistically significant gains in all STEM content areas.





I learned that I DO like robotics! That caught me off guard because I've never done robotics before, never liked robotics. I would see others doing it, and I'm like that's not my thing, until I tried it. And I'm really good at it!

— RISING 10TH GRADER, LINCOLN HIGH SCHOOL
2025 DALLAS, TEXAS ACADEMY

Alabama and California Cadets visited the U.S. Coast Guard as part of the maritime-themed curriculum.

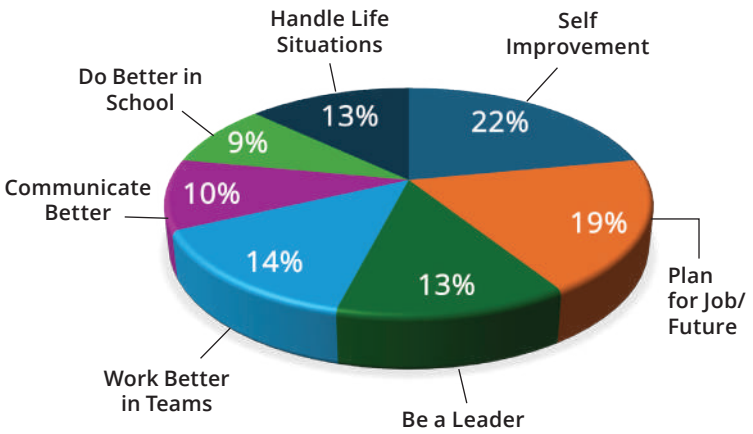
All the workers knew their role and worked together, showing how important teamwork and structure are in a business. They used technology and math to solve problems, using computer software to track data and make decisions.

— RISING 12TH GRADER
MAYS HIGH SCHOOL, 2025 ATLANTA, GEORGIA ACADEMY

Educational Experiences

In 2025, Cadets got a taste of campus life at Academies hosted by Columbus State University, Georgia Southern University, Florida Gulf Coast University, Paul Quinn College, Spring Hill College, Texas A&M University-Commerce, Troy University, and University of San Diego. Cadets experienced hands-on learning in laboratories and engineering departments at Bishop State Community College, Enterprise Community College, Georgia Tech-Savannah, San Diego State University, St. Phillips Community College, University of South Alabama, and University of Texas at San Antonio. Guest speakers shared inspiring personal stories of perseverance and commitment to success, enhancing Cadets' motivation to pursue STEM and leadership goals.

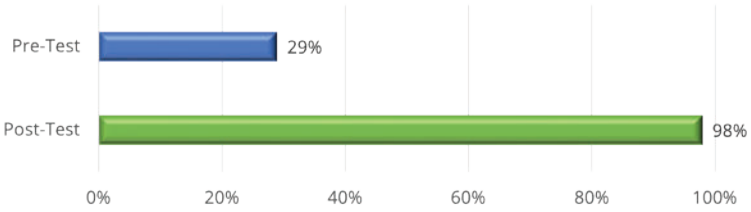
HOW WILL CADETS USE 2025 ACADEMY EXPERIENCES IN THE FUTURE?



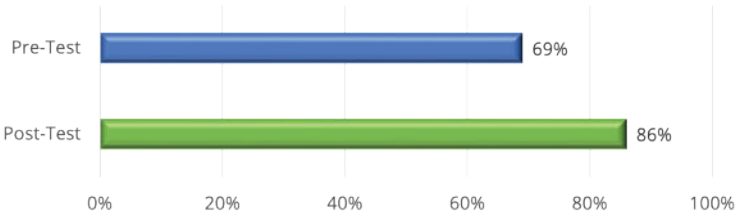
Workplace Visits

To raise Cadets' awareness of how STEM is used in maritime and manufacturing industries, the 2025 Academies arranged visits to 31+ workplaces, including the KIA Manufacturing Plant (GA), Hydro Aluminum Recycling Plant (TX), Innovation Technology Machinery (TX), ports/shipyards (AL, GA), Toyota Motor Manufacturing (TX), U.S. Army Corps of Engineers (FL, GA), U.S. Coast Guard (AL, CA), VEX Robotics (TX) and water treatment plants (AL, CA, FL, GA, PA). Cadets learned about hiring requirements, traits and skills needed, training programs offered, and salaries for local, high-demand STEM jobs.

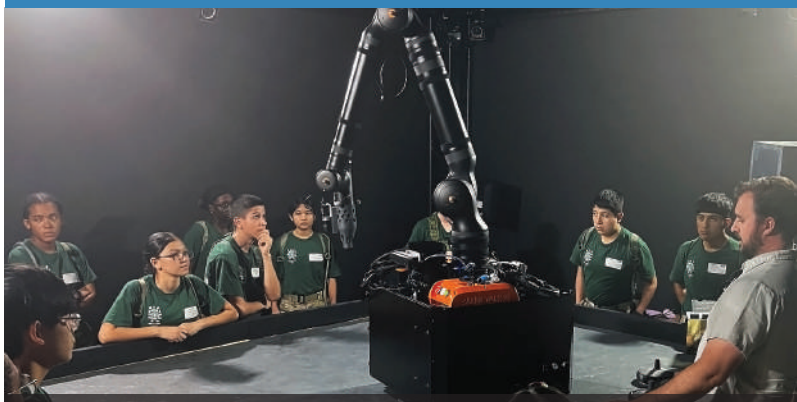
2025 ACADEMY CADETS ABLE TO DESCRIBE WORKPLACES VISITED



2025 ACADEMY CADETS AWARE OF GOOD-PAYING LOCAL STEM JOBS



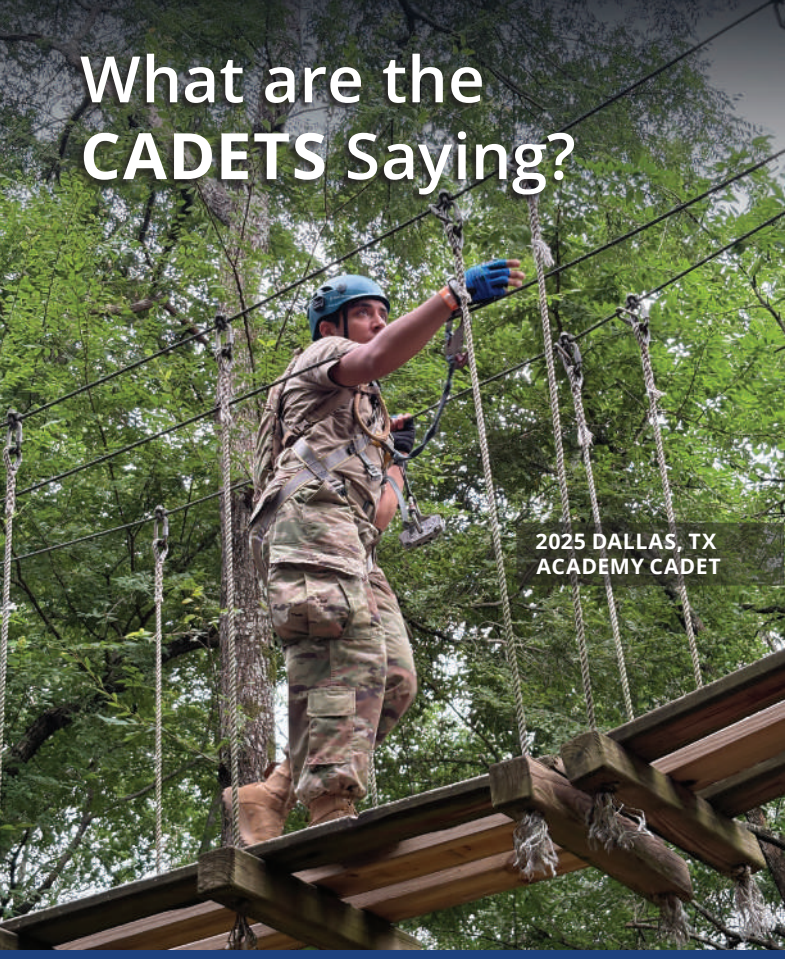
San Antonio, Texas Cadets visited Southwest Research Institute as part of the manufacturing-themed curriculum.



We learned how water is treated and distributed, using STEM in instruments to manage the plant and make water safe to drink. They have job opportunities, and the county will pay for your education while learning new skills at the plant.

— RISING 12TH GRADER
FORT MYERS HIGH SCHOOL, LEE COUNTY, FLORIDA ACADEMY

What are the CADETS Saying?



2025 DALLAS, TX ACADEMY CADET

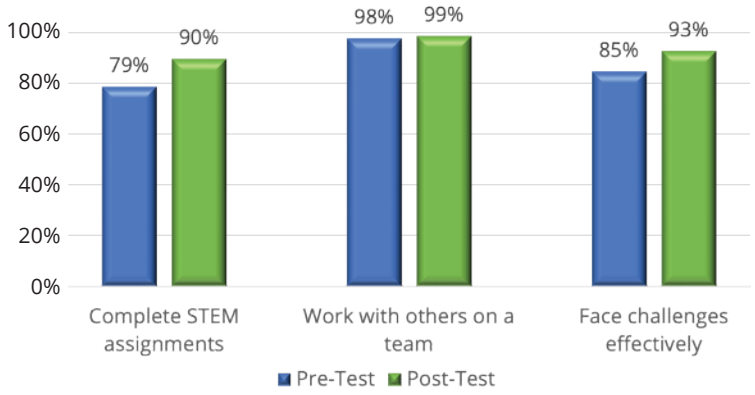
The rope bridge and rappelling helped with our confidence in day-to-day activities, showing us that we can persevere through difficult things and activities that make us nervous.

— RISING 12TH GRADER, RICHMOND HILL HIGH SCHOOL
2025 SAVANNAH, GEORGIA ACADEMY

JROTC Cadet Leadership Challenge Activities

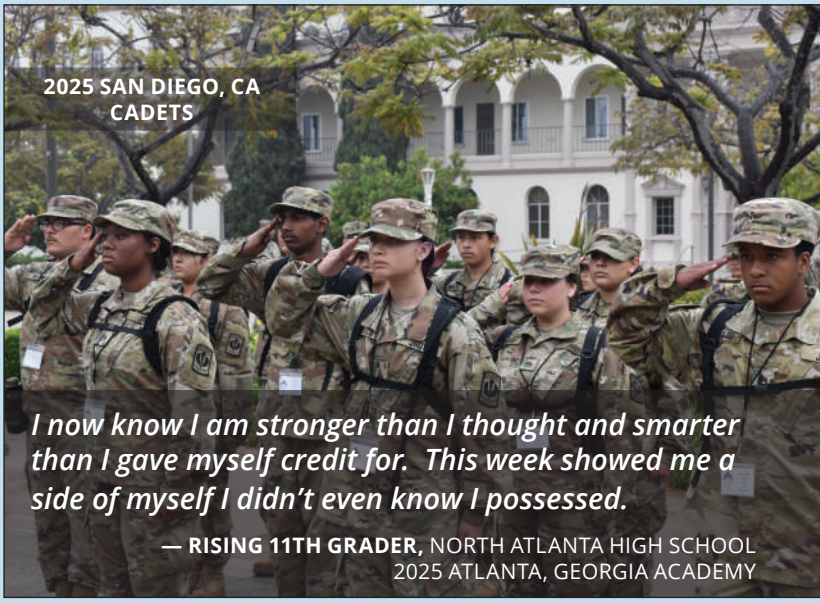
The foundation of the Academy lies in the JROTC culture and character education curriculum. Cadets who attended the Academy received additional exposure to that curriculum and culture by participating in JROTC Cadet Leadership Challenge (JCLC) activities such as rappelling, land navigation, drown-proof training, high ropes, kayaking, white-water rafting, and physical fitness training. Cadets consider JCLC activities a highlight of the camp that engages them physically while building confidence and camaraderie. Combining JCLC activities and STEM design challenges resulted in linked experiences that helped build academic, team, and leadership skills and promoted self-improvement.

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



Overall Conclusions

Based on the analysis of quantitative and qualitative data collected, the **2025 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 made gains in math, science, engineering, and technology concepts aided by hands-on application of those concepts, which increases the likelihood they will be successful in STEM courses and careers. 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.



2025 SAN DIEGO, CA CADETS

I now know I am stronger than I thought and smarter than I gave myself credit for. This week showed me a side of myself I didn't even know I possessed.

— RISING 11TH GRADER, NORTH ATLANTA HIGH SCHOOL
2025 ATLANTA, GEORGIA ACADEMY

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