

Everyday STEM Saturday

Micro Mission: think, code, create, and protect

Class Summary:

Everyday STEM Saturday is a hands-on enrichment program that introduces middle schoolers to computer science, cybersecurity, robotics, engineering, and career exploration in a single engaging weekend session. This first session uses BBC micro boards to teach physical computing: how devices sense, process, decide, and respond to the world around them. Students spend the morning building executive-function skills, exploring cybersecurity basics, and learning core programming logic before applying it all to a real design challenge: building their own Smart Safety Device. They leave with a working prototype, a taste of the engineering design process, and a clearer view of STEM careers.

Topics

- Physical computing and beginner programming with micro boards: sensors, inputs/outputs, and IF/THEN logic
- Cybersecurity awareness, digital responsibility, and computational thinking
- The engineering design process, including executive function and mental performance skills

Learning Outcomes:

- Explain how a microcontroller senses, processes, decides, and responds to the world, using basic programming logic and pseudocode
- Program, debug, and improve a micro board project using sensors, inputs, and outputs
- Apply the engineering design process to a real project and identify STEM careers in physical computing, cybersecurity, robotics, and engineering

Prerequisites:

- There are no prerequisites for this class. No prior coding experience needed: all micro boards, computers, and materials are provided.

About your presenter:

Carla Ferrette-Clark is a retired United States Air Force Technical Sergeant with 20 years of service and a Career & Technical Education educator at Military Magnet Academy. She brings extensive experience in computer science, cybersecurity, robotics, STEM education, and career development, and has coached robotics and cybersecurity teams while connecting students with industry and higher-education partners. Her teaching philosophy centers on giving students opportunities to build, solve, communicate, and see themselves as future STEM professionals. Connect with Carla on [LinkedIn](#).

Vitals:

Cost:	\$50.00	Difficulty:	Beginner (Ages 11-14)
Class time:	9:00am-12:00pm	Computer:	Provided
Class length:	3 hours	Scholarships:	Upon Request
Class size:	10 students		

Location: 4 Conroy Street, Suite A, Charleston, SC 29403 | Parking: Charleston Tech Center Garage