

# STEM Learning in New London, CT

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**“Our motto: Where curiosity is encouraged...”**

## Strategies and Methods

- Preparation activities – Our program is based on a successful curriculum developed over the 12 years of our head coach and founder being an educator in the public school system and highly successful FIRST Lego League coach. With her experience identifying the elements necessary for a successful program including acquiring local professional advice, she is able to navigate a successful path for our teams. FIRST provides the requirements, we provide the means. Each year preparations for the season’s new Project theme vary based on the new anticipated challenge, each year the teams build and program a new robot to solve the new missions on the table. In the winter and spring teams learn the basics of programming an autonomous robot to perform accurately. At the same time, they do background research based on minute hints given in February. These skills and knowledge will be used in the Fall at competitions.
- Recruitment/ retention strategies - We recruit at our local Boys & Girls Club, The Garde Summer Camp and local elementary and middle schools. Most of our members stay with us for their entire elementary – middle school careers and then move on to the High School program when they age out of ours.
- Implementation activities- The program runs year-round. In the Spring we do background research on our annual theme based on teasers provided in February and April. This is when we use the Library of Congress, Teaching with Primary Sources reference materials. We teach and use the Engineering Design and Scientific Methods which includes doing background research on the topic. (See example below) Members learn basic Lego Robot building and programming techniques. In July we offer our STEM education services to enrich the summer school experience for low-income students in New Britain. We also provide after camp classes for the general public and homeschooled children. In the August, our full FLL Project challenge is revealed, and our new table missions are released. We begin our competition preparations in earnest. We compete in November and December.
- Dissemination Method – We write weekly emails to parents, and post regularly on our Southeastern CT Robotics Facebook page. Most of our dissemination and referrals are sourced through word of mouth by our current and former members.
- Plans for sustainability – Our goal is to grow and become a full-fledged after school STEM Education Center in New London county. We added an elementary school team in 2022 and we hope to branch out, again, and add a High School FTC program and a Virtual Reality gathering center for those not interested in robotics. Since our founding in 2020 we have grown in member numbers and resources. The Teaching with Primary Sources Grant has given us the time and resources needed to look for and write a long-term federal grant for a STEM education center in New London county.

## Target Audience(s) and Focus Topic(s)

- Participant-educator audiences – Southeastern CT Robotics is open to members ages 6-14 from any Town in Southeastern, Connecticut. We currently have 36 male and female members ranging in age from 7 to 13. Our coaches and educators are two females with more than 30 years experience between them teaching technology and robotics.
- Curricular topic/grade levels - STEM education, skills and, further, STEM careers are one of the best ways to remain a viable member of society in the future yet, historically, these fields are not considered career options for the underrepresented and underserved populations. We believe this is due, in part, to lack of an available, equal and accessible hands-on programs for the younger populations from ages 6-13. Our Explore team members are in elementary school, grades 4 and 5 and our Challenge team member’s grades range from elementary school grade 4 to middle school grade 8.
- Key partners/ collaborators – We have many collaborators every year. Part of our requirements to be successful is to reach out to professionals and our local communities, especially, those who have dealings with our annual theme. For example, in 2022 we worked with Eversource, our local power company when we were studying energy and this year, we have worked with Westminster Tool who have helped us understand the need for clean and modern manufacturing facilities. Annually, we work with local businesses and non-profits including Spark Makerspace, the Public Library of New London, the Community Foundation of Eastern Connecticut, Pfizer and many more.
- Progress to date – Since 2020 and the founding of our organization during a pandemic with three teams we have grown and thrived in the years since. We had 44 applicants for our 2023 teams and only five seats available. We feel people are recognizing that we bring something different by encouraging a diverse member population, while maintaining our expectations of excellence. We feel we are attracting more new members because we are successful but also because there is a need for our services.

## Hands-on Scientific Method Example from 2023:

Ask a Question:  
Can we make our own model rocket parts that improve the performance of a basic model rocket?

Manufacturing, 1904  
  
Westinghouse Air Brake Co.  
Westinghouse works

Tour of Modern Manufacturing Facility, 2023  
  
Construct a Hypothesis:  
A rounded tip will fly better.

Creating and Testing  
  
Analyze Data and Draw Conclusions:  
Experiment is currently ongoing.

