



Outreach Through Merit Badges

Team 461

Boy Scouts

- ★ ~10 STEM related badges
 - X Robotics
 - Programming
 - Engineering
 - X Electronics
 - Space Exploration
- Get in contact with local troupes and have at public space or attend a jamboree
- Need a Boy Scout Accredited Merit Badge Provider



Boy Scouts: Programming

- Boy Scouts Programming Badge Requirements
 - X Safety
 - X History
 - General Knowledge
 - Intellectual Property
 - **X** Careers
 - Program in at least 3 languages



Boy Scouts: Programming

- **X** Activities
 - **x** Programming in Scratch
 - Programming in HTML
 - Programming in Python
- **X** Materials
 - Computers with internet access and text editors
 - X Scratch Software
 - X Python Software



Boy Scouts: Robotics

- ✗ Boy Scouts Robotics Badge Requirements
 - X Safety
 - X Robotics Industry
 - X General Knowledge
 - X Careers
 - Design, Build, Program, and Test
 - X Demonstrate
 - **X** Compete



Boy Scouts: Robotics

X Activities

- X Program robot to go in line, square, circle
- Program robot to respond to light
- Program robot to perform on Sumo mat
- X Compete in Sumo competition

X Materials

- X NXT Mindstorms or EV3s
- Computers with NXT Mindstorms or EV3 Software



Girl Scouts

- ✗ Over 10 STEM related badges per age group
 - Programming, Designing, and Showcasing Robots
 - 3 hour combined 3 badge workshop
 - X Cybersecurity Basics, Safeguards, and Investigator
- Get in contact with local troupes and use a local public space (library) or your meeting space
- ✗ Badges cost \$3 each



Girl Scouts: Designing Robots

- ✗ Designing Robots Requirements
 - **x** Explore how robots imitate nature
 - X Learn about the parts of a robot
 - Plan your robot
 - Create a prototype
 - X Get feedback on your robot



Girl Scouts: Showcasing Robots

- **✗** Showcasing Robots Requirements
 - Create a presentation to share how you designed your robot
 - X Tell others how you designed your robot
 - Learn about robotics competitions
 - X Learn about robotics teams
 - See robots in action



Girl Scouts: Designing/Showcasing Robots

- **X** Activities
 - Make a prosthetic hand to pick up cup
 - Present prosthesis to group
- Materials
 - X Masking Tape
 - X Hot Glue
 - X Cardboard
 - X Scissors
 - Pipe Cleaners
 - Yarn or String



Girl Scouts: Programming Robots

Programming Robots Badge Requirements:

- ✗ Learn how robots work
- X Discover the robot brain
- ✗ Learn about programming
- X Try simple programming
- **X** Code a robot



Girl Scouts: Programming Robots

Activities

- X Program robot to go in a circle, square, and figure 8
- Program robot to respond to distance and touch
- Program robot to go through obstacle course

Materials

- X NXT Mindstorms or EV3s
- X Computers with NXT Mindstorms or EV3 Software
- X Masking tape



Girl Coders

- 2-Hour long Workshops
- **x** girlcoders.net
- **×** Free badges
- Over 15 differentbadges for gradesK-12





Girl Coders: Cyber-Security

- **X** Activities
 - X Hacker Hangman
 - X Asymmetric Encryption
 - X Social Engineering vs. Social Media
- Materials
 - X Paper/Pencil
 - X Computer with Internet (optional)



Girl Coders: HTML/CSS

- **X** Activities
 - Basic Teaching
 - Using developer tools, command line, and basic HTML syntax
 - Make a webpage about you
- **X** Materials
 - Computers with Internet Access and text editor or command line





