

girl scouts



Junior Girl Scouts Robotics Badges Workshop Guide



Grades 4-5

Updated on 1/13/18

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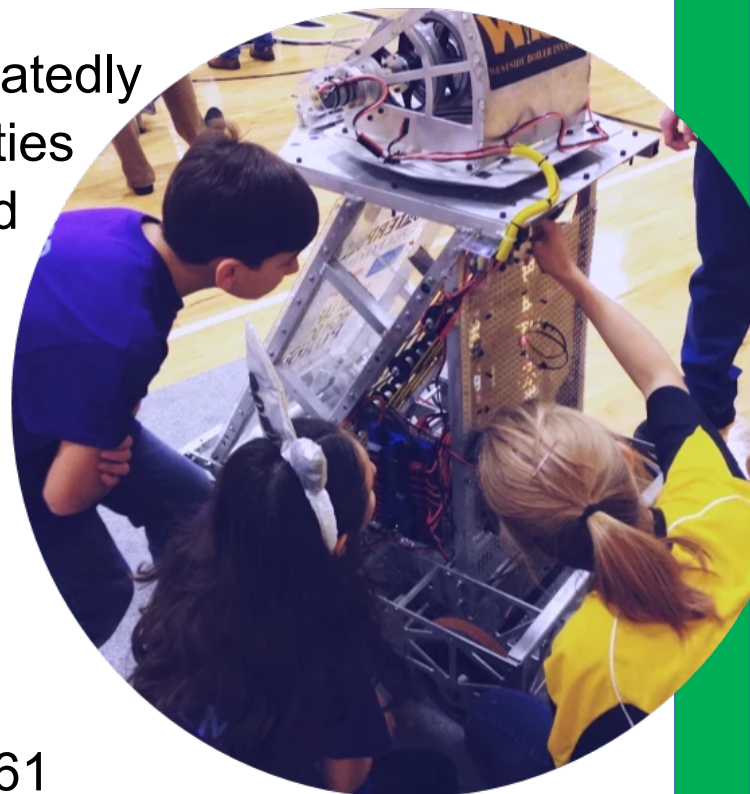


About Us



FIRST Team 461 Westside Boiler Invasion is the FIRST Robotics Competition (FRC) Team from West Lafayette, IN. Founded in 1999, Team 461 has been a driving force for science, technology, engineering, and mathematics (STEM) education in the Greater Lafayette area and beyond.

Notably, Team 461 has repeatedly partnered with Purdue's Minorities in Engineering Program, Boy and Girl Scout troops throughout the Midwest, and Indy Science March in order to foster STEM interest in youth of all ages.



Westside Boiler Invasion



team461wbi



@frc461



Our Workshop: An Overview



In the Winter of 2017, Team 461 hosted our first Girl Scout STEM badge Workshop. We hosted our event at The West Lafayette Public Library for two and a half hours and gave around forty Scouts from six different troops their Designing, Programming, and Showcasing Robots Badges.

The program was free for all attending Girl Scouts thanks to the sponsorship of AndyMark, a local robotics parts manufacturer. Their sponsorship included funding for all 120 badges and robotics parts for demonstration.

The presentations and lesson plans used are available on our website, **BoilerInvasion.org**





Hosting a STEM Badge Workshop

Badge workshops are great community events because they allow troops to connect with other troops. However, workshops are harder to plan than teaching STEM concepts at Scout meetings; this guide and our lesson plan is designed to address any common challenges to help you host your own workshop.

Venue

One of the first things to consider is where to hold your workshop. Community places like libraries, schools, or churches may be willing to host your event for free, however it is important that the venue has power and adequate space.

Cost

The second thing to consider is cost of hosting a workshop. Each badge is \$3, meaning the workshop costs \$9 per Scout if all three badges are given. This money can either come from the Scouts themselves, or the cost can be covered by the hosting organization.

Finding a Sponsor

While optional, having your organization pay for the badges is recommended. In order to make this easier for your organization, finding a sponsor for the event is the most practical option. Approach local businesses, especially those involved in STEM and/or education, and see if any would be willing to cover some of all of the expenses.



Hosting a STEM Badge Workshop (cont.)

Resources

However you go about fulfilling badge requirements, make sure to have enough materials for your activity and then some. Having extras is never a bad thing. If you need to borrow supplies (NXT Mindstorms, laptops, etc.) reach out to local FIRST teams, STEM education groups, or universities if access to technology is an issue.

RSVPs

For something like this, it is very important to know how many Scouts are coming. Set up an RSVP system for parents and/or Troop Leaders to use. Google Forms is an easy to use option for RSVPing and is easier to keep track of than singular emails.

Badges

Badges can be picked up from a local Girl Scout office or ordered from the online Girl Scout store. If going to an office, make sure to call beforehand and make sure they have enough badges for your event.

Being Flexible

Be prepared for the event not to go according to plan and be prepared to be flexible. Let the Scouts have fun and explore even if they are not doing exactly what was expected. In the end the event is not about the badges, it is about the learning process.



Junior Girl Scout Robotics Badges

The Junior Girl Scout Robotics Badges are meant to teach Scouts about the basics of robotics—from engineering to communication to programming.



Programming Robots



Designing Robots



Showcasing Robots



Programming Robots

The official Girl Scout guide to the STEM badges offers suggestions for activities, however as long as the listed requirements are met, you can do whatever activities you like.

The presentations and lesson plans used are available on our website,
BoilerInvasion.org



Requirements:

1. Learn How Robots Work
2. Discover the Robot Brain
3. Learn about Programming
4. Try Simple Programming
5. Code a Robot



Designing Robots

The official Girl Scout guide to the STEM badges offers suggestions for activities, however as long as the listed requirements are met, you can do whatever activities you like.

The presentations and lesson plans used are available on our website,
BoilerInvasion.org



Requirements:

1. Discover the Future of Robots
2. Determine your Robot's Expertise
3. Plan your Robot
4. Create a Prototype
5. Get Feedback on your Robot



Showcasing Robots

The official Girl Scout guide to the STEM badges offers suggestions for activities, however as long as the listed requirements are met, you can do whatever activities you like.

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Requirements:

1. Create a Presentation on how you designed your Robot
2. Tell Others how you Designed your Robot
3. Learn about Robotics Competitions
4. Learn about Robotics Team
5. See Robotics in Action



Further Resources

Listed below are websites that can be used for curricula inspiration for youth STEM activities.

ScienceBuddies

National Geographic Kids

Weather WizKids

Scratch

TechRocket

Hour of Code

**Questions?
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