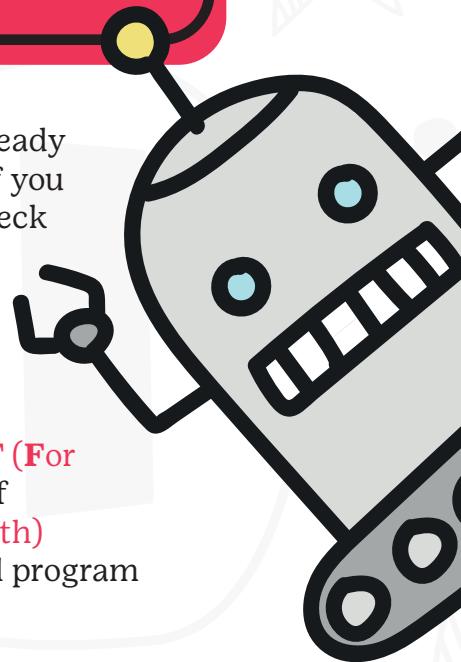


Hello Robotic Enthusiasts!

It is the start of the 2022-2023 robotics season and new information is ready and available for those interested in starting their own Robotics Team! If you want to learn more about how to start a team through GSEOK, please check out our Robotics Teams page at: gseok.org/robotics





You'll find important information regarding types of robotics teams and grade affiliations, how to start a team, and additional resources!

Girl Scouts of Eastern Oklahoma has a proud history of supporting all-girl teams in the various levels of competition offered through **FIRST (For Inspiration and Recognition of Science and Technology)** with the goal of encouraging more girls into **STEM (science, technology, engineering, math)** careers and gender equity in our global society. **FIRST** is an international program created to get kids excited about science and technology.















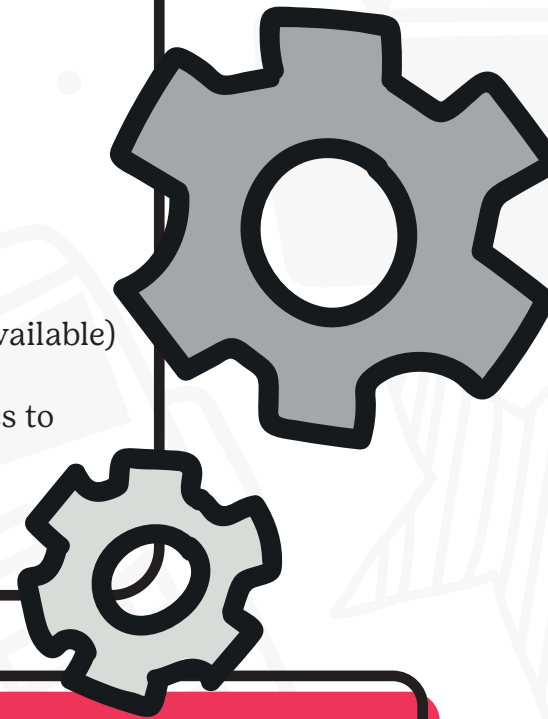
How GSEOK Supports Teams:

For each GSEOK FIRST Robotics Team, Girl Scouts of Eastern Oklahoma will:

-  Provide ongoing support and resources throughout the season
-  Reimburse teams for their FIRST Team Registration fee and Challenge set
-  Provide a robot kit of parts, if needed
-  As funding allows, reimburse teams for other participation expenses (tournament registrations, travel, t-shirts, etc.). This is not guaranteed and exact reimbursement amounts are not known until after the season has concluded.

Each GSEOK FIRST Robotics Team will:

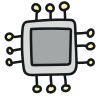
-  Complete the GSEOK Team form online
-  Register team with FIRST and pay the team fee (unless otherwise directed by the council)
-  Have a plan in place for adding new girls to the team. GSEOK teams must have 5 registered Girl Scouts
-  Have at least two unrelated, approved adult volunteers present at all times
-  Provide laptop computer to program the robot
-  Purchase supplies for and build a wooden 4x8 practice table (optional)
-  Provide/find a practice location and a secure storage space for the robotics kit and table
-  Pay registration fees for additional tournaments (optional)
-  Provide snacks and beverages for practices and tournaments (optional)
-  Pay for add-on materials for robots (optional, loaner pieces available)
-  Pay for team transportation costs (optional, likely only applies to teams advancing to State Championship)
-  Participate in evaluations provided by council



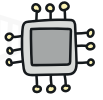
If you are interested in participating in the 2022-2023 robotics season, you will first need to identify who is going to be involved. To register through GSEOK, teams should be made up of a minimum of 5 registered Girl Scout members and at least 2 unrelated, approved adult volunteers. Coaches can be any adults who is ready to learn and grow with their teams as they tackle the seasons' challenge. You don't have to be a troop leader to have a robotics team, just a love of tinkering, problem-solving, and is ready to share their passion with youth!

Creating a Team:

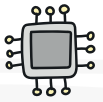
So, you've decided to create a team. That's awesome! Here are 4 easy steps to finalize your team:



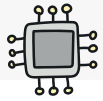
Step 1: Figure out who is on your team and who will be your co-coach. Decide where you will meet and how often.



Step 2: Complete the following form to ensure you are registered with Council and receive all updated information and news:
[**2022-2023 GSEOK Robotics Team Registration Form**](#)



Step 3: Register your team **with FIRST**. Like Girl Scouts, they also have stringent youth protection measures in place including background screening for coaches and mentors, as well as parental consent forms for each participant. When you register, you'll also need to order your materials like your Challenge Set or robot kit.



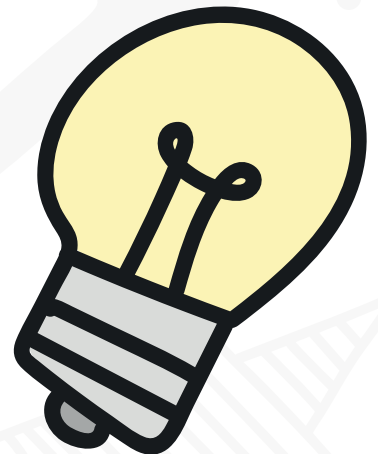
Step 4: Get started!



For FIRST LEGO League teams (4-8th grade), items usually ship in mid August and the season runs from September through December. Each team determines its own practice schedule and chooses which area qualifying tournament to attend. A typical team will meet at least once a week (~90 min) for three months, and may choose to meet more frequently just prior to competition. Some teams choose to start meeting in the late summer to start their topic research for the upcoming season, and some teams choose to keep their season going through winter depending on competition advancement or fun events they choose to sign up for.

The following pages are descriptions of the robotics programs and perspectives from our lead robotics volunteer. If you have any questions, please feel free to reach out to:

Suzanne Dodson
Suzanne.Dodson@magellanlp.com
(918) 625-3405 cell





EXPLORE

2nd - 4th grade

Team Size: 2-6 kids

Coach: Needs to be well organized and able to get kids to work together. No knowledge of motors/gears is needed.

Minimum Cost: Team registration is \$125, buy/borrow a \$300 LEGO WeDo 2.0 or SPIKE Essential set, and add \$40 for misc. materials for the presentation board. Optional items would include team T-shirts (~\$100), additional LEGO pieces (\$ at your discretion), and parts organizer bin/totes (\$30). GSEOK has 1-2 WeDo sets available to borrow.

Time Commitment: 8-12 weeks in the fall. 60-90 minutes for weekly meetings will be adequate, coaches should add 30+ minutes/week of prep time. Challenge is released in August, Exposition of projects is in November. State Championship Exposition is in December.

Official Description: In Explore, teams of students ages 6-10 focus on the fundamentals of engineering as they explore real-world problems, learn to design, and code, and create unique solutions made with LEGO bricks and powered by LEGO® Education WeDo 2.0 or SPIKE Essentials kit.

Suzanne's Unofficial Description: Non-competitive "exhibitions" mean that every kid feels like a winner. The judges give written and verbal comments (3 or more positives for every constructive criticism). Teams research the challenge, share results with their teammates, and choose a model to build. The final model must include at least 1 motorized component, be comprised solely of LEGOs, and no larger than 30" x 15" (the size of 2 large baseplates).

The kids really learn teamwork, they start realizing all the engineering problems that have been solved around them ("Hey look, mom, the creek runs thru the park. That's why they built a park here instead of houses – the park might flood!"). They can invent new solutions to the challenge, or choose to just build a model of something that exists. The competition is a FUN atmosphere – kids that stay into the afternoon are treated to a dance party while the judges tabulate the big kid's results.



girlscouts
of eastern oklahoma

customer@seok.org | 918-749-2551



4th - 8th grade

Team Size: 2-10 kids

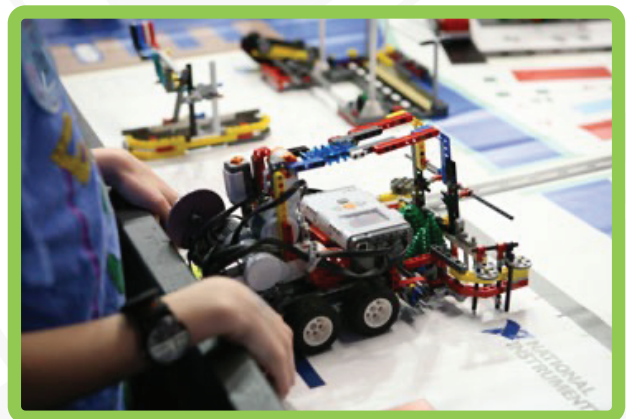
Coach: Needs to be well organized and able to get kids to work together. No knowledge of gears/motors/coding is required but can be learned from YouTube. A tech-savvy kid can make the coaches job easier, but a rookie team will do fine with a willingness to learn.

Minimum Cost: \$250 registration, \$95 field kit each year. Will also need to buy/borrow a LEGO MINDSTORMS or SPIKE PRIME® kit (\$500, GSEOK has several to loan). Optional items would include team T-shirts (~\$100), parts organizer bin/totes (\$30-\$80). Use of a laptop computer is required.

Time Commitment: 10-12+ weeks in the fall. 2 hours/week will be adequate, plan on a few last-minute Friday night sessions if your girls tend to procrastinate. You don't need every single girl at every meeting, especially if you have a large team. Challenge released in August, Tulsa Qualifier is in Nov., State Championship is in Dec.

Official Description: Introduces younger students to real-world engineering challenges by building LEGO-based robots to complete tasks on a thematic playing surface. FLL teams, guided by their imaginations and adult coaches, discover exciting career possibilities and, through the process, learn to make positive contributions to society. Elementary and middle-school students get to:

- Design, build, test, and program robots using LEGO MINDSTORMS® or SPIKE PRIME® technology
- Apply real-world math and science concepts
- Research challenges facing today's scientists
- Learn critical thinking, team-building, and presentation skills
- Participate in tournaments and celebrations





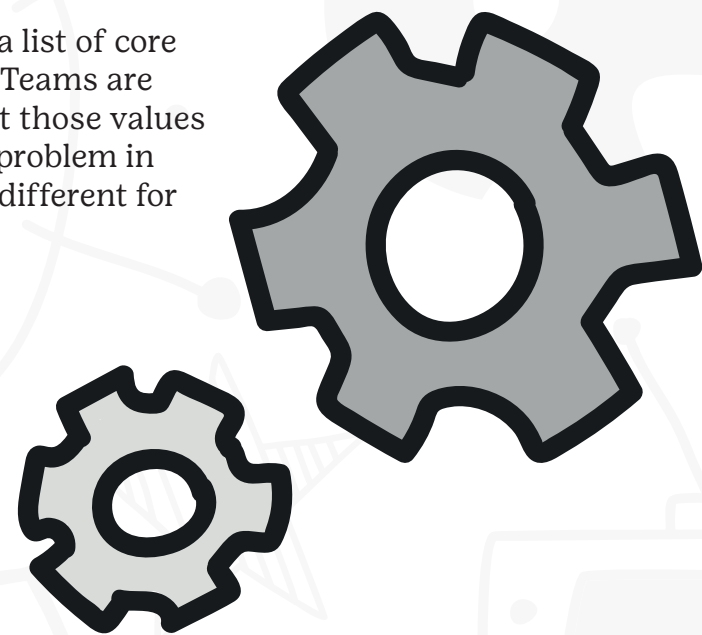
4th - 8th grade continued...

Suzanne's Unofficial Description: The robot game is only 1/3rd of the competition. The other components are the core values (teamwork demonstration) & a creative new idea/prototype that deals with the challenge. While this division is competitive (1st, 2nd, and 3rd place), there are winners for each portion of the competition. The overall winner is VERY RARELY the team with the best robot.

Robot Game: The team builds and programs an autonomous robot. At the beginning of the season, they're given a 4' x 8' mat that represents the game arena. On the mat are different areas where the robot can accomplish different tasks – “see” the red ball, pick it up, and put it thru the hoop. Or pick up and move an “ambulance” into the disaster zone. Each task is assigned a point value. It's impossible for a robot to accomplish all tasks in the time allotted, so the team prioritizes what the robot does to earn the most points.

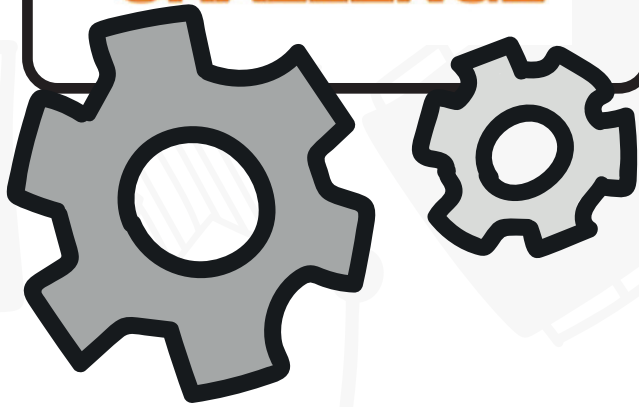
Project: The project component of the competition involved identifying a real-world problem relating to that year's challenge, and coming up with an innovative solution. The team then has to present that solution through a presentation (and poster) and is judged based on the ingenuity of the idea and how well it is presented to the judges.

Core Values: FLL publishes a list of core values (not unlike the GS law). Teams are scored on how well they exhibit those values by working together to solve a problem in front of judges (the problem is different for each qualifier).





**FIRST
TECH
CHALLENGE**



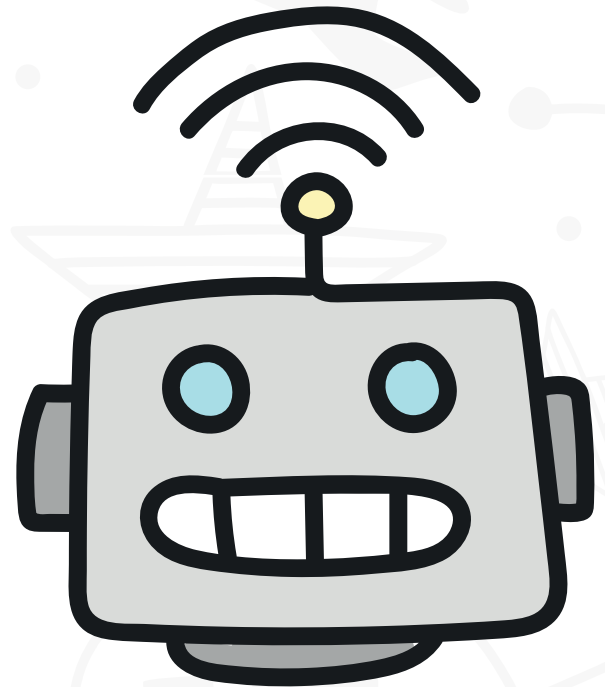
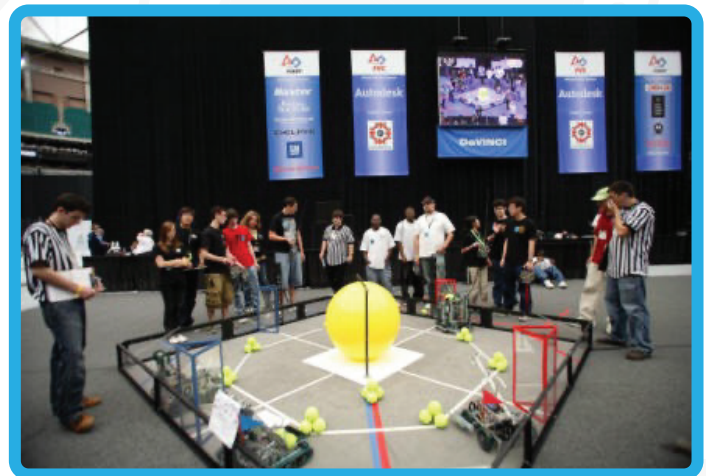
Minimum Cost: A well-funded team would run \$2500-\$5000 for materials if they plan to only compete locally, though a “bare-bones” robot could get by with \$1500 if they also receive the \$500 Rookie Grant. Add more funds if they travel to a regional/national competition. Use of a Laptop Computer is required.

Time Commitment: WEEKLY meetings Sept-Jan, 2-4 hours per week for the coach, lots of flexibility in time commitment for the girls (much of the time they’ll be working in small groups). The 2 weeks before the competition the team will probably be meeting more frequently (not the whole team, just a few members). Challenge is released in September, with qualifiers in January and State Championship in February.

7th - 12th grade

Team Size: 2-15 kids (5-10 kids is ideal)

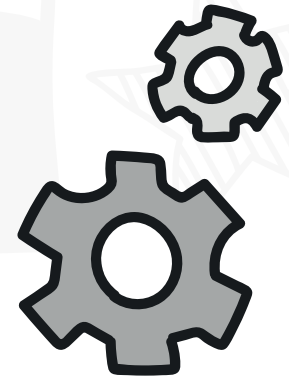
Coach: 2-3 mentors per team is recommended. Ideally, one of those should have some knowledge of engineering or mechanics. However, there is a group called NEMO (Non-Engineer Mentor Organization) that supports mentors and coaches who aren’t engineers themselves.



7th - 12th grade continued...

Official Description: FTC is designed for students in grades 7-12 to compete head-to-head, using a sports model. Teams are responsible for designing, building, and programming their robots to compete in an alliance format against other teams. The robot kit is reusable from year to year and is programmed using a variety of languages. Teams, including coaches, mentors, and volunteers, are required to develop strategies and build robots based on sound engineering principles. Awards are given for the competition, as well as for community outreach, design, and other real-world accomplishments. Students get to:

- Design, build, and program robots
- Apply real-world math and science concepts
- Develop problem-solving, organizational, and team-building skills
- Compete and cooperate in alliances and tournaments
- Earn a place in the World Championship
- Qualify for over \$12 million in college scholarships



Suzanne's Unofficial Description: A big step up from FLL in terms of difficulty and time commitment, but even more fun. A rookie team should be paired with an experienced team that can show them the ropes. Teams will likely hold a combination of whole team meetings and “small group” sessions that work on the robot (High school kids have busy schedules, and building the robot will take 30+ hours). Teams can win awards for a well-thought-out design and great presentation for the judges, even if the robot isn't the best.

Grant Money: \$500 “rookie grant” awarded to most teams that request it (1st-year cost is very high). A very limited number of loaner kits may be available and should be requested the spring before the fall season.

