



FIRST[®] LEGO[®] League (FLL) and *FIRST*Tech Challenge (FTC) Robotics Parents Information Night

sponsored by
Young Innovators' Society

April 23, 2024 7:00PM

* Young Innovators' Society Contact Information

Email: YIS4STEM@gmail.com

Facebook: Young Innovators' Society

Website: www.solonstem.org

* *FIRST* www.firstinspires.org and Young Innovators' Society are separate non-profits

Agenda

- What is *FIRST*?
- What is Young Innovators' Society (YIS)?
- How is YIS related to First Lego League (FLL) and First Tech Challenge (FTC)?
- Historical Themes for the Competitions
- Levels of Participation based upon Age and Grade for FLL Discover, FLL Explore, FLL Challenge and FTC
- Typical Team Meeting
- Forming a Team – Coaches needed!
- Budgeting and Grants
- Team Formation Night
- Email List and Q&A

What is *FIRST*?

For **I**nspiration and **R**ecognition of **S**cience and **T**echnology

- An international not-for-profit organization (501(c)(3)) founded by accomplished inventor Dean Kamen in 1989. FIRST has a proven impact on STEM learning, interest, and skill-building well beyond high school.
- Core Values emphasize friendly sportsmanship, respect for the contributions of others, teamwork, learning, and community involvement
- Corporate sponsors and alliances
- **Global robotics competitions**
 - YIS is participating in FLL and FTC
 - YIS is not currently active in *FIRST* Robotics Competition (FRC)
- Visit their website

<https://www.firstinspires.org/about/vision-and-mission>



What is Young Innovators' Society (YIS)?

"Think Gracious Professionalism"

- YIS is a local non-profit organization of volunteers that inspires preK-12 students to pursue STEM (Science Technology Engineering Math) learning and entrepreneurship
- YIS teaches students to become gracious, professional leaders
- Most of the students are from the local community around Solon
- Focus is on competing in FIRST competitions but there are also other STEM events



How does YIS enhance *FIRST*?

- Core Values & Strategy Event
- Field Trips and/or Speaker Panel
- Coach Roundtables (training & support for coaches)
- FLL Discover Festival
- FLL Challenge Level Only Events
 - Robots & Research
 - Scrimmage (pre-tournament practice!)
 - Presentation Night
- FTC Scrimmage or Tournament
- Parents information / membership meeting
- Resources: coaches, mentors, “kid” mentors, former judges are all part of YIS



What is the relationship between YIS and *First*?

YIS makes sure you are not going it alone

- YIS is here to help Parents and Students form teams and compete in *FIRST* Lego League (FLL) and *FIRST* Tech Challenge (FTC)
- YIS is not affiliated with *First*. YIS provides a community of mentors, coaches, and students to make you successful and get more out of FLL and FTC
- Registration is separate for YIS and *FIRST*
 - YIS Registration is to keep all members informed of local events and to create the team T-shirts.
 - *FIRST* Registration is to attend festivals and tournaments
- *FIRST* is global and can be overwhelming. YIS is local!

Historical Season Themes

Each new season brings relevant topics

- 2010 Body Forward (Biomedical)
- 2011 Food Factor (Food Safety)
- 2012 Super Seniors (Improving Seniors' lives)
- 2013 NATURES FURY – DISASTER BLASTER
- 2014 World Class (Improve learning)
- 2015 Trash Trek (Recycling)
- 2016 Animal Allies
- 2017 Hydro Dynamics (Water quality)
- 2018 Into Orbit (Living in Space)
- 2019 City Shaper
- 2020 Game Changer
- 2021 Transportation
- 2022 Energy – FLL SUPERPOWERED and FTC POWERPLAY
- 2023 MASTERPIECE (Art)
- 2024-2025 SUBMERGEDSM

<https://www.youtube.com/watch?v=4JV7x014U0I>

FLL Discover

Ages 4-6 years

Grades preK-2nd

NOTE: YIS recommends starting with FLL Explore because of the DUPLO class packs and most kids can handle LEGO. YIS does not support FLL Discover.

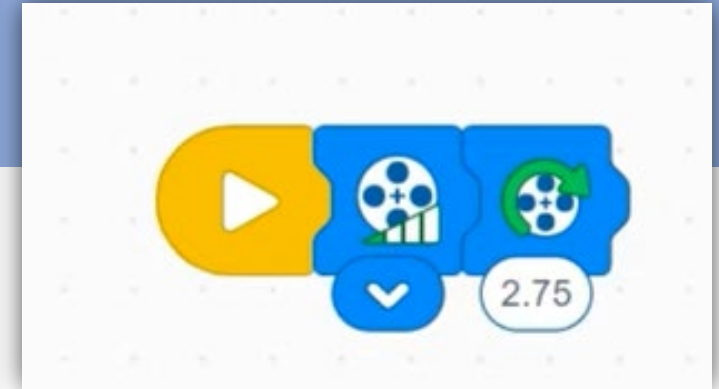


- Team size: 4 to 6 students
- Season: August (or Sept) – January
- Time: 1 hour per week
- Cost: approximately \$400 per team
- After about 3 months of weekly team sessions, students can register with *FIRST* ‘celebrations’ in order to share their experience with the community
 - Completed LEGO™ DUPLO™ models
- Celebrations are non-competitive

FLL Explore

Ages 6-10 years

Grades 2nd-4th

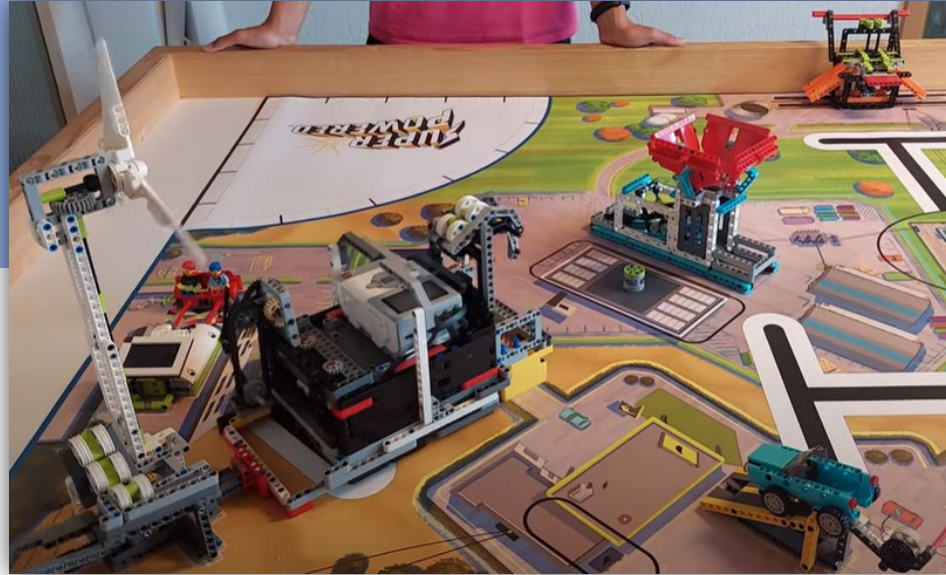


- Team size: 4 to 6 students
- Season: August (or Sept) – January
- Time: 1.5 hours per week
- Cost: approximately \$650 per team
- YIS dues are \$25 each student, which is included in above estimate. Pays for T-shirt and practice Festival
- After about 3 months of weekly team sessions, students can register with *FIRST* ‘festivals’ in near by cities to show off and present what they have learned in front of judges and see what other teams have done
 - 3 panel Poster
 - Q&A with judges
 - Motorized LEGO™ models with Programming
- Festivals are non-competitive

FLL Challenge

Ages 9-14 years

Grades 4th-8th

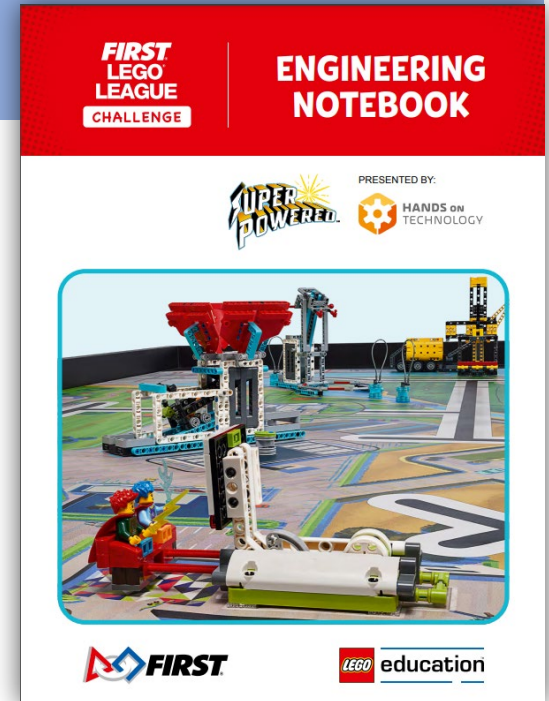


- Team size: 3 to 10 students
- Season: August (or Sept) – January
- Time: 3 - 6 hours per week
- Cost: approximately \$1400 per team
- YIS dues are \$40 per student which is included in above estimate. Pays for T-shirt, scrimmage, presentation night to prepare for competition.
- After about 3 months of weekly team sessions, students can register with *FIRST* 'tournaments'
 - Robot Design Presentation
 - Innovation Project Idea and Design
 - Solve Real time LEGO™ robot missions
- Tournaments are competitive from regionals to nationals

Typical FLL Team Meeting might be ...

Much depends on the level and age of students

- Coaches study the session plan from the FLL Engineering Notebook before the meeting
- Start with a game or fun event to encourage students to attend and arrive on time
- Coaches review the session plan with students
- Execute the session plan
 - For FLL Discover and Explore, students can follow the session plan and LEGO step-by-step instructions
 - Take turns building the LEGO models and programming
 - For FLL Challenge, students can split into pairs for programming, building, brainstorming attachments



FIRST Tech Challenge

Ages 12-18 years

Grades 7th -12th



- Team size: 3 to 10 students
- Season: Sept-February
- Time: 2 - 6 hours per week
- Cost: approximately \$3000 per team
- YIS dues are \$25 which is for the T-shirt
- Non-LEGO robotics kit
 - Build a robot
 - Help others – outreach, outreach, outreach!
 - Program using OnBot Java (or other tools)
- Tournaments are competitive from regionals to nationals

Coaches and Co-Coaches needed

Volunteer parents are the coaches

- FLL and FTC are formed around a Coach with Co-Coach and Mentor
- An example team formation might be
 - Volunteer parent as Coach to organize the team, register team with YIS and *FIRST*
 - Volunteer parent as Co-coach to assist with execution of meetings
 - Mentor can be a parent, YIS, co-worker, etc. to help technically
 - Other parent volunteers to help with hosting meetings, snacks, T-shirt design, Table Design (Challenge only)
- **WE NEED COACH VOLUNTEERS!**
 - Without new coaches, we can not form new teams to replace teams that are graduating to the next level

Budget and Grants

As the level increases from FLL Discover to FTC, the cost increases

- The [firstinpires.org](https://www.firstinpires.org) website contains useful information with sample budgets, grant information and fundraising
- Funding becomes more important for FLL Challenge and FTC as costs and supporting equipment are necessary
- Your company may provide grants and even donate money to non-profits such as YIS for volunteer time
 - For example: Rockwell Automation is one of many *FIRST* sponsors and provides grants for FLL (Explore and Challenge only) and FTC for employees as either coaches and/or mentors
 - 2023-2024 Explore grant \$531, Challenge grant \$1029

Next Step to participating in FLL and FTC

Time to form a team and starting meeting when school starts!

- **Attend TEAM FORMATION NIGHT May 17th 6:30pm – 8:00pm at Orchard Middle School Library**
 - Individuals looking for a team can rally together to form a team. Designate a coach and co-coach. Find volunteers who can host the meetings.
 - Teams that have already started to form can add students – No need to wait for this meeting.
 - Unique QR Codes will be available to make it easier to register your team with YIS
- Team formation considerations
 - Age, grade, and school affiliation
 - Neighborhood and existing friends
- If you can't attend, send an email to YIS4STEM@gmail.com
- **YIS is not responsible for forming the teams, your action is needed!**
- **YIS cannot guarantee placement on a team but we are here to help!**

Keep informed with the YIS mailing list and Question and Answer Time

- Get a head start on forming a team! Make Team Formation Night rallying easier (especially if you cannot attend).
 - Scan the QR code with your phone to sign up for the YIS Email List, or click the link
 - <https://forms.gle/3ZFmVevrdXr818oBA>
- While everyone is scanning, let's do Q&A!
 - Enter your questions in the ZOOM chat and we'll try to answer them

