



# *FIRST*<sup>®</sup> LEGO<sup>®</sup> League (FLL) and *FIRST*Tech Challenge (FTC) Robotics Parents Information Night

sponsored by  
Young Innovators' Society

April 25, 2025 7:00PM

- Young Innovators' Society Contact Information
- General Email: [YIS4STEM@gmail.com](mailto:YIS4STEM@gmail.com)
- Team Formation Email for 2025: [YIS4STEM+TEAM2025@gmail.com](mailto:YIS4STEM+TEAM2025@gmail.com)
- Website: [www.solonstem.org](http://www.solonstem.org)
- Facebook: Young Innovators' Society
- *FIRST* [www.firstinspires.org](http://www.firstinspires.org) and Young Innovators' Society are separate non-profits





# A GLOBAL ROBOTICS COMMUNITY PREPARING YOUNG PEOPLE FOR THE FUTURE

## What is *FIRST*? For Inspiration and Recognition of Science and Technology

- 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 that inspires grades K/1-12 students to pursue STEM (Science Technology Engineering Math) 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



# What is the relationship between YIS and *First*?

YIS makes sure you are not going it alone

YIS is here to help Coaches 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*

**FIRST is global and can be overwhelming.  
YIS is local!**

YIS Registration is for local support and to create the team T-shirts.

FIRST Registration is to attend official festivals and tournaments



# 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 SUBMERGED<sup>SM</sup>
- **2025-2026**  
FLL Unearthed  
FTC Decode

# 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
- 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 6-9 years

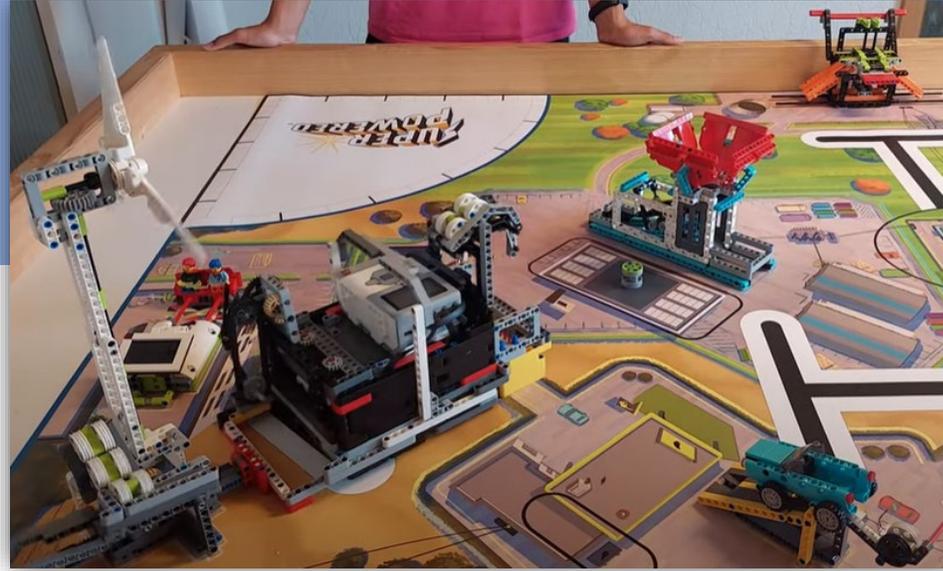
Grades K/1st-4th



- Team size: 4 to 6 students
- Season: August (or Sept) – January
- Time: 1.5 hours per week
- Cost: approximately \$710 per team
- YIS dues are \$35 each student, which is included in above estimate. Pays for T-shirt and practice Festival rental, pizza, water
- 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

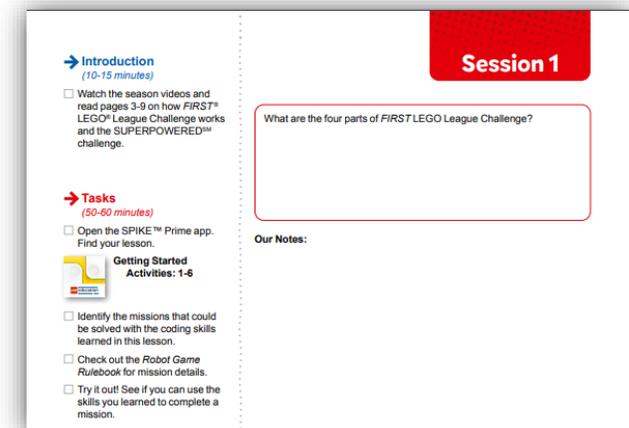
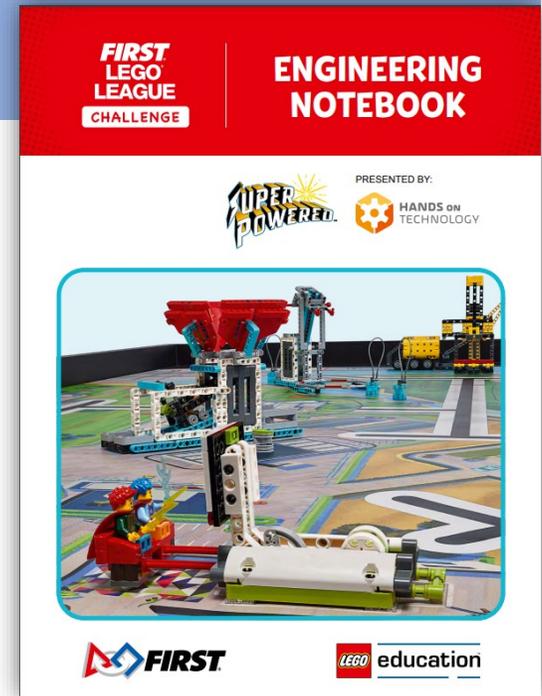


- Team size: 3 to 10 students
- Season: August (or Sept) – January
- Time: 3 - 6 hours per week
- Cost: approximately \$1460 per team
- YIS dues are \$50 per student which is included in above estimate. Pays for T-shirt, scrimmage, presentation night to prepare for competition.
- After about 3 months 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 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 Robotics

Ages 12-18 years  
Grades 7<sup>th</sup> -12<sup>th</sup>



- Team size: 3 to 10 students
- Season: Sept-February
- Time: 4 - 6 hours per week
- Cost: approximately \$3100 per team
- YIS dues are \$35 which is for the T-shirt and helping with outreach events
- 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



At this point, you should have in mind for your student...

*FIRST* Lego League Explore



*FIRST* Lego League Challenge



*FIRST* Tech Challenge

# How does YIS enhance *FIRST Lego League*?



- YIS starts with Parent Info Night and Team Forming Events
- Then YIS improves your chances of success at festivals and competitive tournaments
- YIS has group events so you can practice and scrimmage as if it's the real *FIRST* event
  - Get to know what your team needs to improve upon by observing other teams and getting feedback from experienced coaches
  - Have your team do their presentations in front of judges
  - Have your Challenge team go head-to-head on official competition tables
- YIS FLL Explore Practice Events
  - **Presentation and feedback with all YIS teams present (like a real festival)**
- YIS FLL Challenge Training and Practice Events
  - Robots & Research
  - **Scrimmage (pre-tournament practice!)**
  - **Presentation Night (pre-tournament practice!)**

# How does YIS enhance *FIRST Lego League*?



- YIS schedules Field Trips and/or Speaker Panels related to the annual theme that you will need
- YIS Coaches Roundtables (Q&A and support for coaches)
  - Especially useful for first time coaches
- **YIS sponsored *FIRST* FLL Explore Festival in Solon area**
  - **YIS teams can participate in a *FIRST* Discover festival – priority registration for YIS teams**
  - Event is in Solon which is great for the younger kids so they don't have to travel very far
- YIS People Resources: coaches, mentors, “kid” mentors, former judges are all part of YIS



# How does YIS enhance *FIRST Technical Challenge*?

- YIS helps with the team forming
- YIS has many coaches and students who graduated from FLL to FTC
- YIS helps provide community outreach events that will help qualify you for awards
  - FIRST Dean's List
  - Inspire Award
  - Think Award
  - Connect Award
  - Innovate Award sponsored by RTX
  - Design Award
  - Motivate Award
  - Control Award
  - Compass Award (optional)
  - Judges Choice Award (optional)



# Community Outreach Solon Summer Fest and Parade 2024



# Many Success Stories over the Years



The screenshot shows the Providence House website with the following elements:

- Logo:** Providence House, EVERY CHILD IS YOUR CHILD™
- Navigation:** about us | services | outcomes | admissions | donate | EAST CAMPUS
- Section Header:** Loose Screws (Team 11095)
- Text:**

We are a team of six 11th graders from Solon, Ohio. Most of us have been a part of the FIRST organization for 9 or more years, and this is our 5th year of competing in FTC. Our team strives to improve our community by supporting those around us and to increase awareness of STEM opportunities.

Throughout the years, our team has received donations from many companies, and we would like to in turn give back to the community by asking our friends and families to support Providence House, an organization which protects at-risk children, keeps families together, and provides crucial assistance to those who are in need during crises.
- Image:** A group photo of the Loose Screws team at the FIRST Tech Challenge. They are holding a trophy and a sign that reads "LOOSE SCREWS 11095". The background features the "FIRST TECH CHALLENGE" logo.

<https://www.provhouse.org/campaigns/loose-screws-team-11095>

<https://www.instagram.com/loosescrewsftc/>

# Breakdown of 2025-2026 YIS Membership Fee

	FLL Explore	FLL Challenge	FTC
<b>T-Shirt</b>	<b>\$20</b>	<b>\$20</b>	<b>\$20</b>
<b>Various Events and Overhead</b>	<b>\$15</b>	<b>\$35</b>	<b>\$15</b>
* Two team Formations Events - flyers, rented facilities	Included	Included	Included
* YIS Overhead for website, email, insurance, ZOOM	Included	Included	included
* Community Outreach - Solon Parade and Summer Fest	Included	Included	included
* Practice Festival with pizza, water rented facilities	Included		
* Practice Presentation Night		Included	
* Scrimmage with pizza, water and rented facilities		Included	
* Robots and Research		Included	
* Introduction to FTC – FTC Outreach opportunities at FLL events			included
<b>TOTAL</b>	<b>\$35 per student</b>	<b>\$50 per student</b>	<b>\$35 per student</b>

\* All costs just estimations for upcoming year. Actual costs are higher but offset by donations

# *FIRST* Lego League Explore Team Cost Estimation Breakdown

	Cost
Registration and Theme Map and Lego model – required every year	\$175
Lego Essentials Robot Kit – required for first year	\$375
<b>TOTAL</b>	<b>\$550 new team minimum</b>

<https://www.firstinspires.org/robotics/fll/explore/pricing-and-payment>

# *FIRST* Lego League Challenge Team Estimation Breakdown

	Cost
Registration and booklets – required every year	\$275
Lego Mission Models – required every year	\$125
Lego Spike Prime Robot Kit – required for first year	\$650
<b>TOTAL</b>	<b>\$1050 new team minimum</b>

<https://www.firstinspires.org/robotics/fll/challenge/pricing-and-payment>

# *FIRST* Tech Challenge Team Cost Estimation Breakdown

	Cost
Registration – required every year	\$325
Robot Kits starting at \$1000 – required for first year	\$1000
Additional robot parts – required for first year	\$375
<b>TOTAL</b>	<b>\$1700 new team minimum</b>

<https://www.firstinspires.org/robotics/ftc/cost-and-registration>

# Additional Costs Depend on Team

	<b>Cost</b>
<b>Registration for Festivals and Tournaments</b>	<b>Typically free or &lt;\$50</b>
<b>Snacks and drinks</b>	<b>Could be significant if you have big snackers</b>
<b>Extra Robot Parts</b>	<b>Could be significant buying extra robots and parts</b>
<b>Arts and Crafts Material, poster boards</b>	<b>Depends on how fancy you want to get</b>
<b>Field Trips</b>	<b>Could be free or paid</b>



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



## Opportunity for 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 especially FTC Robotics 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) and FTC for employees as either coaches and/or mentors
    - 2023-2024 'New' Team Explore grant \$531, Challenge grant \$1029

# Next Steps for *FIRST* Lego League

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

- Attend TEAM FORMATION NIGHT May 9<sup>th</sup> 6:30pm – 8:00pm at Orchard Middle School
  - 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.
- Team formation considerations
  - Age, grade, and school affiliation
  - Neighborhood and existing friends
- If you can't attend, send an email to [YIS4STEM+TEAM2025@gmail.com](mailto:YIS4STEM+TEAM2025@gmail.com) and make sure to fill out the survey
- **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!**

# Next Steps for *FIRST* Technical Challenge

Deciding  
whether to do  
FLL Challenge or  
FTC?

Form a Team!

- Attend INTRODUCTION to FTC May 4 3:30pm-4:30pm at Solon Public Library
- Attend TEAM FORMATION NIGHT May 9<sup>th</sup> 6:30pm–8:00pm at Orchard Middle School
  - 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.
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Keep informed with the YIS mailing list, distribute your name to potential coaches, and Question and Answer Time



- Scan the QR code with your phone to complete the Parent Information Night Survey 2025, or click the link
  - <https://forms.gle/hz6WKfXSfGbPyZjd8>
  - Answer questionnaire if you want to YIS to help facilitate matching students with coaches even before team formation night, be a coach or mentor, or volunteer for YIS
- While everyone is scanning, let's do Q&A!
  - Enter your questions in the ZOOM chat and we'll try to answer them