2025 Argo Robotics Plan

This document is a work in progress. Last updated Sep 11, 2025.

Vision and Summary

Inspire problem solving and teamwork
to all interested Argo Bears
through FLL Robotics.

The Argo Robotics Committee (ARC) focuses on supporting *community teams*, that

- convene **once a week at Saratoga High School** for technical training sessions and
- practice twice a week at times and locations of each team's choosing.

Registration is open to Argonaut Elementary School 4th graders and above[1]. There will be no limit to the number of teams. Every student who registers will get a chance to participate.

Reasons To Participate

Reasons to Participate	Reasons NOT to Participate
• My student wants to try out FLL robotics. • My student wants to find out more about robotics at the middle and high school levels. • My student wants to build lasting memories with their friends. • My student wants to practice problem solving with a team. • We need help building a team.	• I need someone to watch my student after school. • My student just wants to play with their friends.

Team Formation and Space

The ideal team consists of

- 4-6 students; *we recommend 4 students*
- One *Technical Coach* (adult volunteer)
- At least one *Innovation Project Coach* (adult volunteer)
- One *Logistics Coach* (adult volunteer)

[1] This program participates in FIRST Lego League *Challenge*, which is open to ages 9-16. See https://www.firstlegoleague.org/about .

Students and families are free to form their own teams. The ARC will facilitate team formation for students who do not already have a team.

"Most successful teams have involved parents."
– Anh-Quan Nguyen, SHS FRC FLL Program Lead

Space requirements

- Each team needs to have a meeting space (i.e., someone's home) to accommodate:
  - 4'x8' challenge mat
  - Space on the side for building
  - Laptop(s) for coding

Team Practices

Like garage teams, the dates, times, and locations of team practices are determined by the families of the students on the team. Each team should practice minimum twice a week for two hours each session.

Each team will need off campus practice space. The space

- Should be flat
- Should be large enough to accommodate the challenge mat (~4'x8') and space for team members to work
- Does not require a table, but we can find someone to help you build one if desired
- Does NOT need to used exclusively for the duration of training

People's garages tend to be ideal spaces for practices. You can park your car elsewhere during practice. When done, the mat can be rolled up, and your car can go back into the garage.

We recommend that students work in pairs, e.g., - two students coding together and two students building the robot together.

Technical Training Sessions

Technical training sessions serve to support team coaches and monitor team progress. They take place on the Saratoga High School (SHS) campus and are led by SHS mentors. Student behavior supervision by SUSD cleared parent volunteers is mandatory or a session will be canceled. Sessions will generally last 2 hours outside of school hours.

Technical training sessions for students may consist of:

- Classroom lectures
- Hands-on workshops

- Office hours - debugging code or builds with student team members

Technical training sessions for coaches may consist of:
- Team check ins and updates.
- Coach-the-coach lectures for the logistics, technical, and innovation project coaches.
- Q&A with experienced coaches, e.g., Mr. Anh-Quan Nguyen from the SHS FRC FLL Program.

The ARC will work with the school to schedule technical training sessions. The exact dates and times of on campus technical training sessions is TBD.

Curriculum

The ARC will work with experienced coaches and SHS mentors to design a weekly curriculum covering both team practices and technical sessions. This curriculum will provide structure, consistency, and clear goals for the season.

A draft curriculum is currently in progress and will be shared soon. This curriculum will serve as the guide for both the coaching team and the SHS mentors, keeping practices organized and focused.

Mentors

We are very fortunate to have the support of the SHS mentors. They bring energy, creativity and real world robotics experience that make the program engaging and inspiring for our kids.

While the mentors will be following the curriculum, it's important to remember they are students themselves–not teachers or tutors so they are not able to run the program independently. To ensure the best experience for everyone:
- Parent coaches must be present for the training sessions.
- Please allow the mentors to focus on their role without additional direction.
- If you have ideas, suggestions, or concerns, please bring them to ARC, who will make sure the feedback is addressed.
- Let's show appreciation for our mentors' time who are generously volunteering while balancing their own studies and activities.

Communication

SHS MSET will use Slack to communicate with all team families. We will not use WhatsApp.

Note that Slack is used by many SHS programs to communicate between teachers, parents, and students.

Competition

The first qualifying tournament happens in November at various times and locations on a weekend. If teams perform well, they advance. The Argo Robotics program supports teams up to November only.

Assets

ARC owns five LEGO® Education SPIKE™ Prime Sets that teams are allowed to borrow for the duration of the season. If a team advances, the loan may be extended for longer.

Financing Teams

The requested per participant donation is $140.00.

Costs

- Per team (registration and equipment)
    - FLL registration costs $250 + tax
    - FLL Challenge Set (game pieces, mat, etc.) $95 + tax + shipping
    - Trifold poster board (cost TBD)
    - Total per team cost = **$385.32**
    - *Note: We aim for each team to have 4 participants.*
- Per participant
    - End of season party - Estimate $20 / participant
    - T-shirts
        - Estimate $15 / participant
        - Estimate $15 / participant's parent
        - Leftover cash will be spent on end of season party
    - Total per participant cost = **$40.00**
- Might pay
    - Food during on campus technical training sessions?
    - Paying the custodian ($60 / hour) after 9:00 PM or on weekends
- Other costs
    - Teams are responsible for their own LEGO® Education SPIKE™ Prime Set
        - LEGO® Education SPIKE™ Prime Set (Item 45678) = $399.95 + tax + shipping per unit
        - SPIKE Prime Expansion Set (Item 45681) = $139.95 + tax + shipping per unit
        - ideally two per team
    - Teams are responsible for their own travel expenses.

Financial assistance

- Please indicate during registration
- May borrow Argo Robotics Spike Prime kit with check deposit

Commitment and Contribution Hours

Important: These are minimums. To be competitive at tournaments, most teams will need to put in significantly more time.

Students Minimum Weekly Commitment

- 6 hours/week (2 practices x 2 hours each) + technical training sessions.
- 1 hour/week independent work (research, coding, documenting).
- Hours will go up during competition prep time Oct-Nov and averages ~10hrs+.

Parents' Minimum Weekly Commitment

- Technical coach
  - 6 hours+/week for practices
- Innovation project coach
  - 1-5 hours/week
  - Time is lighter at the beginning (idea discussions) and increases as the season progresses.
- Logistical coach
  - 1-2 hours/week
  - Managing signups, tracking attendance, sharing updates on slack, facilitating meetings/check-ins, working with ARC
- Non-coach
  - 1 hour/week
  - chaperoning, snacks, carpooling

Parent volunteers will need to be cleared as volunteers by SUSD to participate.

Accountability

- Parents' active participation is vital to the success of the students' experience!
- Coaches will track student attendance and parent volunteer hours in a shared Google sheet which will be reviewed by ARC.
- More than 2 unexcused absences for a student or parent will prompt a family check-in.
- If a coach parent doesn't show up, the session is cancelled.

Links

https://www.firstinspires.org/robotics/fll/game-and-season
https://www.argonautpta.org/argorobotics
2024-25 Argo Robotics Plan
Argo Robotics WhatsApp group (only for the ARC)
Argo Robotics Loan Agreement
Team meeting guide
Engineering Notebook
Robot Game Rulebook
From MSET Fish Team 649

- FLL Timeline
- FLL Presentation Week 1

Timeline

All teams will work toward a November competition. Teams that advance will continue training independently and compete in February.

Week of	Events and Milestones	Notes
Aug 18	Draft working document (this document)	
Aug 25	Announce Parent Info Night Preemptively register 6x teams	
Sep 1	Tue Sep 2 - Parent Info Night [meeting recording] Fri Sep 5 - Student registration deadline [MTK form] Sat Sep 6 - ARC forms teams using registration info Mon Sep 8 - ARC publishes team rosters	No school Monday
Sep 8	SHS MSET helps teams sketch timelines with milestones Teams Teams coordinate schedule and parent coach roles **Orientation Friday 9/12** • Team parents meet in person • Challenge Sets arrive and are distributed to each team • Parent coaches set up their accounts in FLL with help from ARC • ARC loans out robot kits Team building sessions (team names, ice breakers, season intro)	Hold in Argo MPR
Sep 15	Sessions begin with SHS MSET Teambuilding Intro to FLL and robot building	

	SHS MSET highlights competition rules Innovation Project brainstorming begins	
Sep 22	SHS MSET checks in on Innovation Project progress Base robots should be done First sketch of strategy for solving challenges should be done Identify and interview experts for Innovation project	
Sep 29	Team robots can complete 2+ challenges Teams begin practicing the who-does-what-when during competition Innovation Project prototype building begins	
Oct 6	Team robots can complete 3+ challenges Teams start practicing on different challenge mat fields Innovation Project poster boards distributed	
Oct 13	Teams practice technical interviews AND Innovation Project presentations	
Oct 20	SHS hosts scrimmage *(exact date TBD)*	
Oct 27	Practice. Tweak. Practice. Tweak. Teams practice technical interviews AND innovation project presentations	
Nov 3	Code and build freeze. (No more changes.) Practice. Practice. Practice.	Conference Week
Nov 10	FLL Qualifiers *(exact date TBD)*	
Nov 17	FLL Qualifiers *(exact date TBD)*	
Nov 24	Thanksgiving Holiday	No school all week
Dec 1	End of Season Celebration *(exact date TBD)* Club Yearbook Photo	

Q&A

I missed the deadline! Can I still register?

Maybe. We will start forming teams ASAP after the deadline. Participation is not guaranteed if you contact the ARC after the deadline. Any accommodations for late registration are at the discretion of the ARC and will be handled on a case by case basis.

Can an SHS Mentor come to my house to assist my team?

No. For health and safety reasons, SHS mentors will not provide off-campus technical assistance. SHS mentors are very busy teenage students.

What happens to the challenge sets after the season ends?

Teams are welcome to keep the challenge mats and Lego challenges. Maybe the kids sign them as a memento!