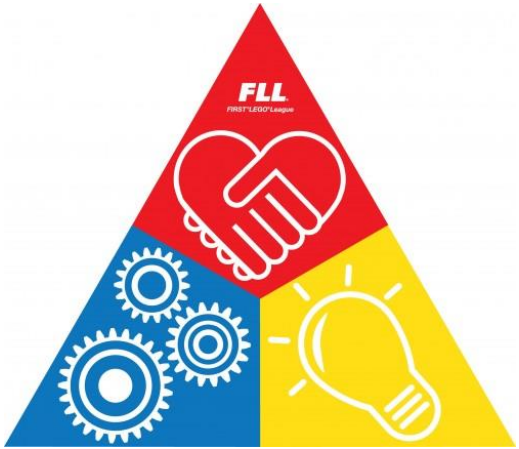
FLL - New Coach Training

Robot Game, Core Values, & Project



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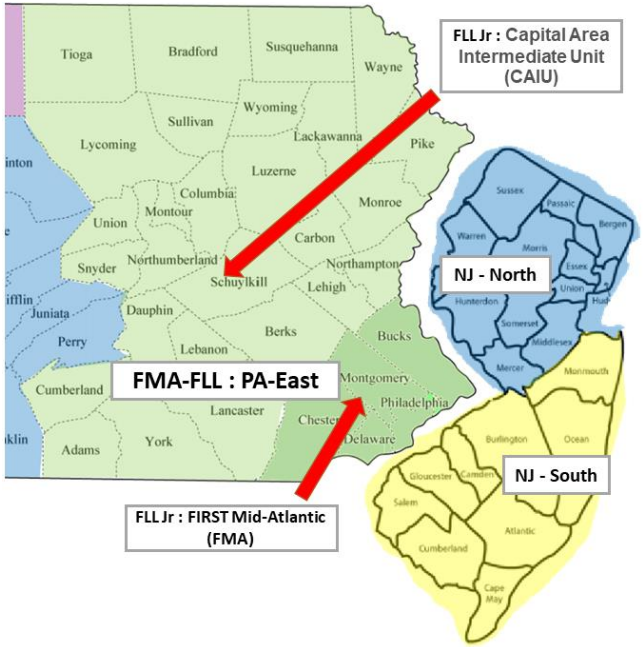
Who's Who

- FIRST
  - **A GLOBAL ROBOTICS COMMUNITY PREPARING YOUNG PEOPLE FOR THE FUTURE**
- FIRST Mid-Atlantic
  - Local 501(c)(3) non-profit licensed to run FIRST program in the New Jersey, Delaware and Eastern Pennsylvania
- FMA-FLL
  - FIRST Lego League program run by FIRST Mid-Atlantic
  - Frank Larkin – FLL Director
    - e: flarkin@midatlanticrobotics.org
    - p: 215-823-9593



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FMA-FLL Team Education

- FIRST Mid-Atlantic Website
  FLL Team Info gathers resources from around the Web.

- ✓ Coaches Required Reading
- ✓ Important FML-FLL Reading
- ✓ EV3 Hardware
- ✓ EV3 Programming
- ✓ EV3 Mechanical
- ✓ EV3 Advanced Programming
- ✓ Challenge Project
- ✓ Challenge Global Innovation

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Consolidated Information

Single Launch Point for all information:
https://www.firstlegoleague.org/season

- ✓ Various Challenge Videos
- ✓ Rubrics help the judges deliberate for awards and provide feedback to teams
- ✓ Awards depends on the tournament size.
- ✓ Mission Model Building Instructions
- ✓ Judging Workflow
- ✓ Participation Rules
- ✓ Robot Game Rulebook
- ✓ Table Build Instructions
- ✓ Challenge Updates (Very important)
- ✓ Think Space Instructions

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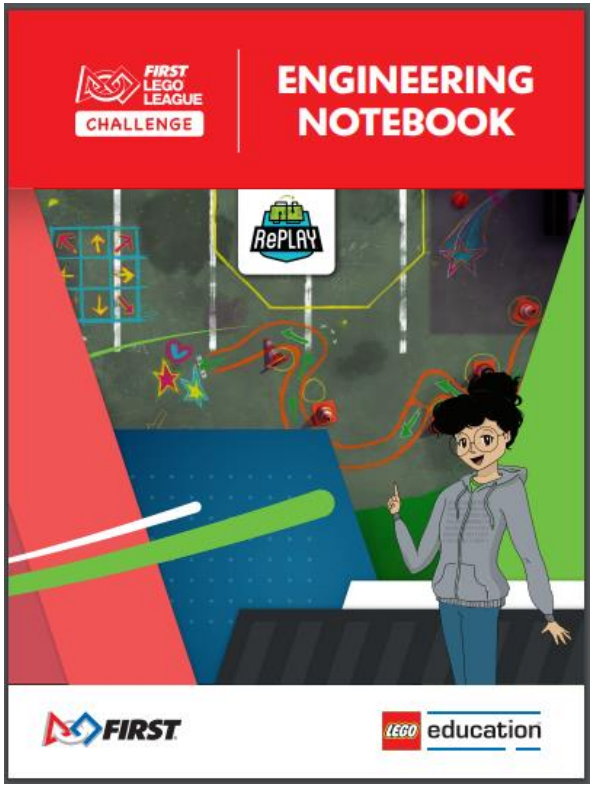
Engineering Notebook

Notebook designed to get your students to record their ideas. Can be used to demonstrate process to judges. Each registered team will access to download these.

Note: This is a Guide, use it as you see fit.



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Guided Discussions

Notebook designed help you keep your team members on track to complete all tasks. This guide will make suggestions and structure for each meeting.

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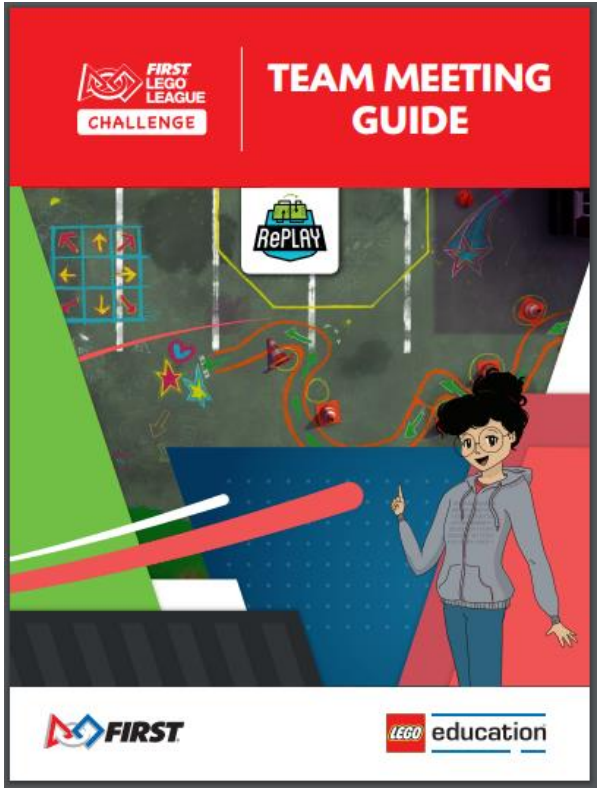

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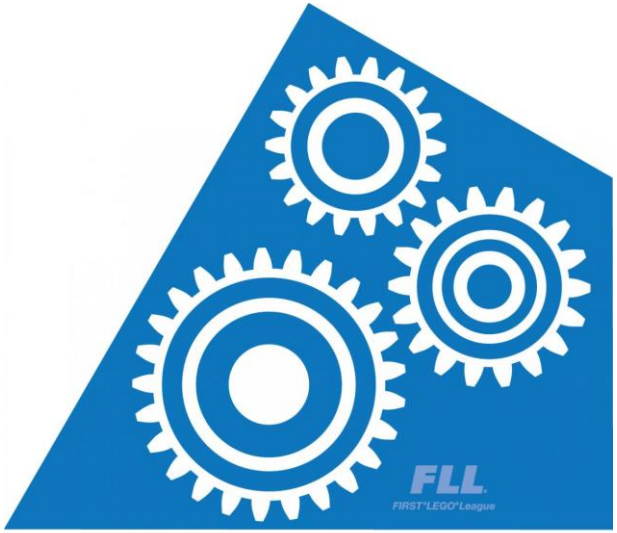
Robot Judging

- Getting ready
- Robot Design Executive Summary
- Lego EV3 Programming
- Robot Design Judging
- Programming
- Table Missions Discussion
  - No Competition table in Judge's Room!!!
  - Unable to demo missions
- Resources



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Robot Design Judging

- ***No Challenge Table in Judges' room!!!***
- 3-5 minute "presentation" (Robot Design Executive Summary)
  - Be prepared to discuss the robot and the design process.
- Judging Q&A:
  - Mechanical Design, Programming and Strategy and Innovation

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Robot Judging - Sample Questions

- Explain how the robot moves around the board and describe how the parts work together to make it move.
- How many attachments did your team build for your robot?
- How many and what type of sensors does your robot use?
- Did you program the robot using NXT/EV3 (software with kit)?
- How many programs are stored in the NXT/EV3 brick?
- How consistent are the programs (always successful, mostly successful, sometimes successful)
- How many missions can your robot attempt to complete?
- Are there any features of your robot that you feel are special, different or clever?
- Explain the solution of your favorite mission showing the judges the program and pointing out any specific attachments your robot uses to complete this mission.

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Robot Tips

- Consistency will be your biggest problem. It will work “sometimes” at home. It will likely NOT work on the competition field.
  - Find out how to detect lines
  - Use fixed assets on the field (walls, field elements)
  - A robust robot is a more stable and more reliable
- Know how the field is placed within a table. Distance between the field mat on the table walls is NOT required to be a fixed distance
- Make sure students know how to setup the field. IN DETAIL. The field setup is THEIR responsibility.
- Introduce variables during practice
  - Bumpy mats
  - Lighting challenges (flashlights, different bulbs)
  - Bumpy walls

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Table Mission RePlay

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Core Values Judging

- The Core Values
- Gracious Professionalism
- Coopertition

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FIRST Core Values

We express the FIRST® philosophies of Gracious Professionalism® and Coopertition® through our FIRST® Core Values:

- Discovery: We explore new skills and ideas.
- Innovation: We use creativity and persistence to solve problems.
- Impact: We apply what we learn to improve our world.
- Inclusion: We respect each other and embrace our
- Differences.
- Teamwork: We are stronger when we work together.
- Fun: We enjoy and celebrate what we do!

Gracious Professionalism ™

“It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.”

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The Core:
Gracious **P**rofessionalism®

- Respect for the feelings, opinions, and culture of others.
- Respect for equipment.
- Good sportsmanship.
- Being friendly and polite at all times to all persons.

The Good

- Fun physical pushing, shoving, or other kid behaviors
- Tossing LEGO's to each other
- Running when appropriate
- Allow team members to make mistakes and learn.

The Bad

- Laughing at others mistakes
- Making negative comments about other teams, robots, shirts, mascots, etc.

Coopertition®

- Cooperation and Competition
- Once you have mastered a skill, you teach it to someone else so that everyone can do better next time.
- Example: Sharing a spare part or battery charger with another team so they have a chance to compete

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Presenting to Judges

- 5 minute Core Values challenge
  Ex: 10 things to bring to a deserted island
- 3 minute presentation on Core Values poster
  Show judges ways in which team exhibits core values
- 2 minute Q&A
- Example

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Project Judging

- Solving real world problems
- Field Trip and Expert Research
- Community
- Solution
- Presenting to judges

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Solving Real World Problems

- Teams research a real-world problem in the field of this season's Challenge theme
- Create an innovative solution to that problem
- Problem often is personal to the team or to a team member

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Field Trip and Expert Research

- Plan field trips that fit the Challenge
- Organize so that professionals on the field trip can speak to students
- Great team-building activity
- Encourage students to ask questions and start thinking about problems and solutions

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Community

- Reach out to local businesses, universities, and organizations
- Contact relevant professionals
- Have students consider needs of their community
- Organize having a professional come and speak with students
- Teamwork and a sense of community are necessary!

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Solution

- Steps of Project:
  1. Identify a Real-World Problem
  2. Create an Innovative Solution
  3. Share Your Research and Solution
- Share with audiences that can benefit from the solution
- Consider getting a patent.
- Don’t reinvent the wheel. The project should be:
  - realistic.
  - scalable.
  - supported by research and development.
- Build on other ideas & solutions.

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Presenting to Judges

- Refer to FMA-FLL team Info/Education Pages
- Must show judges that all three steps of the Project were completed
- Must show that the project was relevant to season challenge
- Second half of Project is Q&A
- They want to hear about the process!
- Want to hear about potential of solution and what is needed to make it a reality

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Global Innovation Award

- Refer to FMA-FLL team Info/Education Pages
- Separate FLL Region wide award given to a team with the most innovative solution.
- Teams at qualifiers will be judged if their project is worthy to move on to FMA-FLL Champs as GIA nominee.
- At FMA-FLL Champs the top project will be sent to FIRST for GIA consideration.

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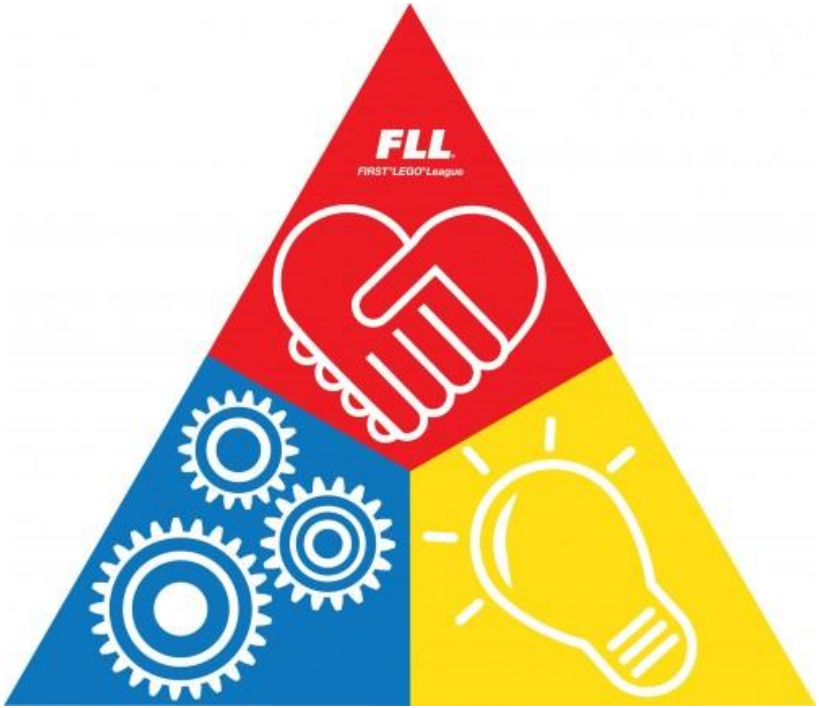

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