Coaching FLL: What have I gotten myself into?
Agenda

- What you got yourself into?!
- Core Judging Overview
- Core Values
- Project
- Robot
- Team Meetings and Tournament Schedule
Coaches (and Mentors)

We should...
✓ Provide learning opportunities
✓ Foster critical thinking
✓ Facilitate pro-social behavior
✓ Celebrate everyone’s success
✓ Allow the children to lead
✓ Allow children to struggle with challenges
✓ Develop children’s self-advocacy
✓ Be a positive example

We should not...
✗ Focus on winning
✗ Do everything
✗ Jump in at the first sign of struggle
✗ Complain about judging decisions
✗ Worry about other’s opinions
✗ Restrict creativity
Judging Overview

• Teams will participate in 3 equally weighted judging sessions:
  Core Values
  Research Project
  Robot Design and Programming

• Advancing is determined by judging sessions and NOT the robot game. Teams must be ranked within the top ~60% to advance but their rank is not factored into the advancing criteria.
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1. We are a team.
2. We do the work to find solutions with guidance from our coaches and mentors.
3. We honor the spirit of friendly competition.
4. What we discover is more important than what we win.
5. We share our experiences with others.
6. We display Gracious Professionalism® and Coopetition® in everything we do.
7. We have FUN!
Core Value Judging

• Teams will create a tri-fold to display their adherence to the core values. Information can be found in the rubric.
• Teams are judged on core values at each of the judging sessions—project presentation, robot design/programming, and core values.
• Covert roving judges will take notes on interactions between team members, judges, and competitors.
Tips and Tidbits Core Values

• Become very familiar with the core values.
• Discuss them. Discuss how they apply to their life outside of robotics!
• Have the kids understand them.
• Practice team building activities.
• Record your journey with pictures, movies, journals, etc.
• Have fun.
Research Project

Create an innovative solution to a problem within the theme.
Project Progression

1. Define problem.
2. Thoroughly research the chosen problem.
3. Develop an innovative solution.
4. Share your findings with others.
5. Create a presentation to showcase your research at the tournament.
At the Tournament

• The team will present their presentation to a panel of judges.
• Strict five--minute time limit INCLUDING SETUP.
• Following the presentation, judges will ask team questions.
• Team members must do all of the work.
• Only team members are allowed to speak in the room. (This is most difficult for the coaches.)
Tips and Tidbits
Research Project

- Project presentations must be live.
- Strongly consider NOT using a laptop to avoid setup issues.
- All team members should participate.
- Team members MUST do everything!
- Try to keep presentation length to about 3--4 minutes to allow for mistakes.
- Videotape the presentation and have the team watch it.
- Practice, practice, practice—with audiences.
Robot Design and Programming

1. Mechanical Design
   Is the robot durable?
   Does your robot balance speed, accuracy and strength?

2. Programming
   Are programs modular and easy to understand?
   Does the robot look to perform reliably?

3. Strategy and Innovation
   Did you follow a design process?
   Do you have a sound strategy?
Robot Judging

- Robot judging can be different at various tournaments:
  Teams can be split between mechanical and programming judges
  Teams can be expected to perform a few of their “favorite” missions
  Teams can sometime be expect to deliver a short informal presentation (“Tell us about your robot”)
Tips and Tidbits Robot Judging

• Consider keeping an engineering notebook. Document everything:
  - Meeting notes
  - Practice runs (and what went wrong)
  - Changes to software and mechanics
  - New ideas
• Be prepared for various judging scenarios.
• Practice what to say during “favorite runs”.
• Consider having material to leave the judges (copy of programs, pictures of various robot builds as you progressed, copies from the engineering notebook of practice runs)
Robot Game

- Three rounds.
- Round is one 2 ½ minute session where the team runs the robot’s programs to amass the most points they can.
- Robot must move autonomously and cannot be touched outside of base without incurring a penalty.
- Robot can be modified within the base.
- The robot can return to base as often as you like.
- Team members validate scoring and appeal ruling if necessary — the coach does not.
- A full list of rules can be found on the FLL website including limitations on the number of motors and sensors.
Tips and Tidbits Robot Game

• Start with a pre--designed robot and modify to your needs.
• Learn the rules. The rules state exactly what they intend to. The rules are intended to define hidden freedoms.
• Complete easiest missions first.
• Look for simple solutions.
• Your robot will fail repeatedly. It will frustrate you. This is OK. This is a learning opportunity.
• You will not be ready for the tournament. This is universal!
• Complete multiple missions in one program.
• Document with mission planning sheets.
• Check the new rulings regularly.
• Have kids practice scoring rounds. Play loud music. Have family members cheer. Countdown the final 10 seconds.
Getting Ready for the Tournament

• Make a competition day packing list and have the students follow it. **Read the communication from your event coordinator**
• Consent & Release forms must be completed prior to the event. On paper or online!
• Print extra schedule for your parents that will be coming to the event.
• Read the Robot Game Updates (hopefully earlier)
• Pack your robot securely and keep it safe
• Bring a backup of your team’s programs
• Print: team info sheets, judge packets if desired, programs, etc.
Tournament Time

▪ Find a scrimmage (or two) to attend.
▪ You will **not** be ready. The team will be—you will not.
▪ Prepare a checklist to make sure you have everything:
  ✓ Robot, attachment and jigs
  ✓ Printed software (if desired for judges)
  ✓ Laptop
  ✓ Extension cord
  ✓ Posters (research and core values)
  ✓ Presentation materials.
  ✓ Research materials
  ✓ Snacks
  ✓ Extra batteries
  ✓ Cables
  ✓ Team Information Sheet (several copies for judges)
▪ Take a deep breath, relax, and reflect on the learning that has taken place.
Competition Day

• Have a team huddle!
• Make it to the Coaches meeting or send a parent
• Give parents roles (timekeeper, lunch, etc.)
• Pep-talk before and after each judging
Tournament Schedule

- Begin early in the morning—about 8 am.
- 3 Robot Game Rounds (could be morning or afternoon)
- Judging (could be morning or afternoon)
  - Project Presentation
  - Robot Programming and Design Session
  - Core Values session
- Closing Awards Ceremony—about 3 to 4 pm.
Post-Competition

- Congratulate your team!
- Eat
- Plan a celebration (ice cream!). Go over the day while it’s still fresh
- Have a confession session
- Plan for your next competition
Team Meetings

- Create a schedule that works for you. Meet once or twice a week for about two hours. The frequency of meetings will often increase as the tournament approaches.

- Set goals, assign tasks, and report back at the end of the meeting. Set goals for next time.

- Do team building exercises.

- End with timed robot runs to practice timings, transitions, and robot alterations.
Helpful Resources

✓ STEMcentric -- [www.stemcentric.com/nxt](http://www.stemcentric.com/nxt) – tutorial

✓ Techbrick – [www.techbrick.com](http://www.techbrick.com) ---- Variety of resources including worksheets for mission design, information on building robots, etc.

✓ Bricklink – [www.bricklink.com](http://www.bricklink.com) ---- LEGO marketplace


✓ YouTube – Videos of the EV3s in action

✓ FLL Starting Points – [https://www.startingpoints.com/fll/](https://www.startingpoints.com/fll/)