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Frances Harpst
Avonworth First Lego League
frances.harpst@comcast.net

What I learned in my first year as a First Lego League coach

1. Keep it fun and positive, always.

2. It’s not only about the robots. It’s about facilitating a team to work together effectively toward a goal – the competition.

3. Shadow with another coach for a few practices.

4. Don’t worry about learning the programming – use the tutorials that come with the Mindstorms Education base set (order from LegoEducation.com) and the CMU Robotics Academy curriculum.

5. Make sure team members and their parents understand the commitment and the focus on the competition – twice a week for 2-3 hours and daily before the competition.

6. The kids lead, you follow. Encourage and ask questions to help them think through their challenges. Keep your ideas to yourself even if you think they’re on the wrong track.

7. Kids at this age do not have experience working on teams for long projects and deadlines. Expect conflicts, frustration, working through challenges, etc.

8. Limit robot team size to 8 with one robot for every two kids.

9. Get help from parents, teachers and high school students with fundraising, setup and organizing, research project, snacks, etc.

10. Communicate frequently to parents, principals, school district, and sponsors.
Detailed tips to start and support a First Lego League team

**Work out the logistics**
- Determined where and when team members will meet. Ideally, the space will have 4-5 computers and space for the competition table, e.g. computer lab at school.
- Met with organization leaders, principals to build a relationship and secure their ongoing support during future scheduling issues, etc.
- Load NXT software and Robotics Engineering curriculum on computers.
- Put the principal/organization leaders on email distribution list to keep them in the loop on team’s activities.
- Find a volunteer to build a 4x8 competition table.

**Build your team**
- Determine if you have diversity goals – e.g. 50% girls.
- Call parents and teachers to recruit team members by describing the program
- Follow up with an individual email recapping the program with links to FLL site, Robotics Academy, etc.
- Be clear about the commitment – regular and mandatory practices twice a week, the competition date and practices every day during the week before.
- Recruit a couple of high school students to help set up, keep parts organized, etc.

**Make purchases**
- Register the team on the First Lego League site. ($ 175)
- Order LEGO MINDSTORMS Education Base Set robots – suggest 1 robot for each pair of team members plus one spare ($260 each) www.legoeducation.com
- Order Robotics Engineering curriculum on CD from CMU Robotics Academy ($ 225 site license) http://www.education.rec.ri.cmu.edu/
- Purchase 4-6 small parts containers – Home Depot has great ones. Have team sort like pieces into separate sections.
- Estimate annual budget – $2000 for first year for 5 robots, registration, t-shirts for competition, cases for Lego parts, party, etc.

**Raise Funds**
- Recruit a parent or volunteer to lead fundraising efforts.
- Present program to PTA, school superintendent, wrote fundraising letters, etc. (Marketing material is posted on First Lego League site.)
- Apply for grants from local non-profits
- Call local businesses related to research topic.
- Open bank account.
- Ask for in-kind donations from photographer, graphic artist (who created stationary for fundraising)
- Send thank you letters and certificates to everyone who supports the team in any way.
Practice and prepare for the competition

- Communicate to parents on a weekly basis reminding them of practices, countdown to the competition, snack schedule, etc. Err on the side of communicating too often.
- Practices should be between 2-3 hours long, twice a week. Could be daily the week before the competition.
- Start each practice off with a countdown of the number of weeks to the competition.
- Find dedicated coach(es) for research project who can work with those team members during part of the practice each week. Start early!
- Set deadlines to accomplish individual missions 3 weeks before the competition. Devote the rest of the time to practicing the combined missions within the allowed time limit (usually 2.5 minutes).
- Give simpler missions to the kids who want to work on the research project so practices for both during the 2 weeks before the competition don’t become too intense.
- Set expectations early with team members and parents that the competition will be a long day.
- Have a snack break and rotate who brings the drinks and snacks.

After the competition

- Have an awards party! Distribute certificates of achievement to team members and certificates of appreciation to everyone who helped.
- Invite parents, mentors, administrators – anyone who was involved.
- Notify your local newspaper, school newsletter, etc.
- Display awards in trophy case at school, church, etc.

Challenges

- Kids are learning, probably for the first time, how to work effectively as a team on a large project. Be prepared to facilitate primarily about teamwork and individual effort – how to be a good team, how to handle interpersonal conflict, stress, discouragement.
- Demand is high, supply is low. Recruit and train more leaders to accommodate the number of kids who want to be on a team.
- Limit team size to 8 for robotics, with a robot for every two kids.
- Fundraising was time consuming and lagged expenditures.
- Preparation for competition was intense, particularly the last two weeks.
- Behavior issues can become disruptive and lower morale. Implement a zero tolerance policy with a behavior contract at the beginning of the season.