Jr. FIRST LEGO League in Sawyer Elementary school

This document was written by Dagney Paskach as a proposal for how to start and sustain Jr. FLL teams in Sawyer Elementary school for the 2015-16 school year and on.

1. Forming the teams

Send out the application forms (see **appendix**) for Jr. FIRST (For Inspiration and Recognition of Science and Technology) Lego League (Jr. FLL) to all the students grades 1-3 in the school newsletter and via class emails. The application includes the student's name, grade, summary of why they are interested in being on a team, parent availability, and a letter of recommendation from a current or former teacher.

Have an informational meeting for all kids that are interested, parents invited. This would be held in early October. Parents and students would get the chance to see what Jr. FLL is and turn in their applications if they want to commit to being on a team. Have interested families give the school's coach (technology education teacher or Maker Space supervisor) their email address.

The school's coach would then process the applications in a pre-appointed time frame. He/she would create the teams based on parent availability, student availability, grade level, etc. The max size for Jr. FLL is 6 kids. Each team also needs 2 parents committed to coach the team. A Team Neutrino mentor would be assigned to each team as needed. I recommend that you don't have more than three teams at your school for the school's rookie year, and then never more than five teams at a time.

2. The Jr. FLL season

Based on what Edwards' Club Proton did this year, here is what I suggest for a season schedule. This can be condensed or expanded depending on school needs, although I feel that this schedule provides the students with plenty of time to get comfortable enough with the material to make the projects truly their own and learn the most possible. The Learn to Learn lessons can be found in the appendix, and if your school does not have these kits, you can use parts from your LEGO education kits or random LEGOs. A complete set of lesson plans will be provided to the school's coach at the beginning of the season.

Suggested dates		*Main Goals (1 meeting/week)*
October 20	*Pre-season*	Introductory parent/student meeting
Nov. 16-19	*Week 1*	Introductions Icebreaker game

		What is Jr. FLL? FIRST intro video Learn to Learn p.10 (Ready, Set, Build!)
Nov. 30-Dec. 4	*Week 2*	Simple machines overview part 1 Learn to Learn p.12 (Maggie's Wheelchair) Learn to Learn p.13 (Super Structures)
December 7-11	*Week 3*	Simple machines overview part 2 Divide into teams and choose team names Brainstorm about challenge topic
December 14-18	*Week 4*	Simple machines overview part 3 Design team logo
		(Winter Break)
Jan. 4-8	*Week 5*	Team survey Start researching
Jan. 11-15	*Week 6*	Continue researching
Jan. 18-22	*Week 7*	Start LEGO education exploration
Jan. 25-29	*Week 8*	Continue researching
Feb. 1-5	*Week 9*	Continue LEGO education exploration
Feb. 8-12	*Week 10*	Finish researching Create bibliography
Feb. 15-19	*Week 11*	Finish LEGO education exploration
		(Conferences)
Feb. 29-March 4	*Week 12*	Learn to Learn p.22 (My Machine Invention) Engineering design process Sketch designs of model
March 7-11	*Week 13*	Start building
		(Spring Break)
March 21-25	*Week 14*	Continue building
March 28-April 1	*Week 15*	Continue building
April 4-8	*Week 16*	Programming part 1 Include the motorized component and revise model
April 11-15	*Week 17*	Programming part 2

		Edit/revise/test/program model Start the Show Me! Poster
April 18-22	*Week 18*	Edit/revise/test/program model Work on Show Me! Poster
April 25-29	*Week 19*	Edit/revise/test/program model Work on Show Me! Poster
May 2-6	*Week 20*	Finalize Show Me! Poster and model
May 9-11	*Week 21*	Practice presentations
May 12	*Maker Faire*	Present and Share
May 16-20	*Week 22*	Celebrate

3. Funding

Club Proton was funded in part by Team Neutrino, Danfoss, and the Edwards PTO for the 2015 season. A budget is outlined below for the 2015-16 season assuming Sawyer starts three teams. You will note that last year's expenses were a lot higher than this year's. This is because you only need to buy the LEGOs once, and they can be used year after year. Each student would be expected to contribute some amount of money to the team. I suggest $20, which would mean that eventually the program would be self-funded, but that amount can be adjusted.

<u>Expenditures for Sawyer 2015-16</u>
$50 Registration fee
$210 Base kit
$230 Robotics kit
$5 Base Plate
$495 Total Cost/team

<u>Expenditures for Sawyer 2016-17 and on</u>
$50 Registration fee
$5 Show Me! Poster materials
$60 Students' t-shirts
$115 Total Cost/team

<u>Income for Sawyer 2015-16</u>
$640 PTO
$20 Per student (x18)
$500 local sponsors
$1500 Total Income

<u>Income for Sawyer 2016-17 and on</u>
$20 Per student
$0 PTO
$120 Total Income/team

If there is more interest in future years, I suggest the PTO fund the start-up cost for each additional team. I suggest no more than five teams total in a given year. That would mean that the PTO would fund the start-up cost for no more than two new

teams for the 2016-17 season as needed, assuming Sawyer has three teams during the 2015-16 season. Please see below for details.

Start-up Team Expenditures	
$50	Registration fee
$210	Base kit
$230	Robotics kit
$5	Base plate
$495	**Total Cost/team**

Start-up Team Income	
$20	Per student (x6)
$375	PTO
$495	**Total Income/team**

4. Sustainability

Jr. FLL can be sustained at Sawyer Elementary with the continued support of the PTO, Team Neutrino, and Sawyer parents and teachers.

The PTO would sponsor the teams by allowing them to meet at Sawyer and fund startup costs. The Club Proton Jr. FLL teams met in the library this year, and that worked out well. In the future, I hope that the Jr. FLL can become an extension program to the Maker Space.

Each team would have at least one FIRST Robotics Competition (FRC) Team Neutrino (high school level of Jr. FLL) mentor assigned to them to help guide discussions and provide advice. Several of our team members are FLL alumni, and with the FLL program at Ames Middle School, we expect this to continue. Members of Team Neutrino have the not only the experiences from being on LEGO teams themselves, but also teaching experiences from our super summer camps, former mentoring programs, and the Sawyer tech camp.

Parent support is also necessary for Jr. FLL to be sustainable at Sawyer school. Two parents would be needed to coach each team. Coaching the team could include, but would not be limited to, leading team meetings, leading discussions about the research project, helping the team stay on task, bringing snacks, and sending out team emails.

5. Additional Resources

For more information about FIRST, visit www.usfirst.org.
For more information about Jr. FLL, visit http://www.usfirst.org/roboticsprograms/jr.fll
What is Jr. FLL FIRST intro video: https://www.youtube.com/watch?v=woThaOOIhvE
For more information about Team Neutrino, visit www.teamneutrino.org

6. Contact Information

Dagney Paskach
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7. Supporting Documents

Supporting documents are included in this folder, and they include the following:

Student registration form
Club Proton newsletter
Learn to Learn lessons