



ORTOP Grant Information for *FIRST* LEGO League team

It is important that persons applying for an ORTOP grant have an understanding of the *FIRST* LEGO League program and what is expected of our grant coaches.

What is a *FIRST* LEGO League (FLL) team and what do they do?

If you visited a FLL team meeting you would see 6 -10 kids, ages 9 – 14, working with a NXT LEGO Mindstorm Robot kit. A few kids would be using the 1000+ parts in the kit to construct a LEGO Robot with motors, sensors (Light, Touch, Ultrasonic-distance and/or Sound) and the NXT brick that acts as the robots computer. The robot would also have 3 or 4 wheels to help it move around.

See links for what is in a NXT kit: <http://www.legoeducation.com/store/detail.aspx?by=6&pl=10&ID=1263>

And <http://www.legoeducation.com/store/detail.aspx?by=6&pl=10&ID=1277>

And <http://www.legoeducation.com/store/detail.aspx?by=6&pl=10&ID=1271>

Other kids would be at a 4' x 8' mat in a FLL competition table with Climate Connections LEGO mission Models. They would be figuring out strategies for the robot's path or working with LEGO parts to construct attachments for the robot push, pull or lift items on the mission models to achieve the task.

See this link for a video explanation of a previous year's mission. <http://webstreamer3.doit.wisc.edu/lego/>

Other team members are on the internet/looking in books researching the team's Project. The Project is a 5-minute presentation of the team's solution to the Climate Connections Project Challenge.

See this link for details of last year's Project: <http://www.firstlegoleague.org/default.aspx?pid=23740>

What every FLL team needs:

Provided by the Team!

- A place to practice at least once a week, twice a week is better.
- A computer with a XP operating system or Mac OS X
- Committed Coach(es)!

Provided by the Team and/or by an ORTOP Grant

- *FLL Competition NXT Robot Set
- *Climate Connections" Field Set-up Kit
- *A FLL Competition Table (grant may provide funds to buy materials, coach must find a way to build it)
- *A FLL 2007 Team Registration (comes with Coach handbook/ info DVDs)
- *ORTOP Qualifying Tournament Registration

** Items that can be provided by grant if team qualifies*

What is the Coach doing?

The coach is facilitating the team's progress, helping them with teamwork skills, helping them find resources, teaching the robot building and programming skills she/he learned at the ORTOP free coach workshops, serving snacks, keeping the team on task. It is up to the kids to solve the challenge.

For Workshop Information: <http://www.ortop.org/res.htm#work>

What else does a grant team coach do?

A lot, coaches are the heroes of *FIRST* LEGO League! This list of tasks can be divided among several adults depending on your school, program, organization or club situation. In a timeline order:

- **May – Sept. 1:** Apply for the grant. Earlier the better!
- **June – Sept:** Attend the required free ORTOP training workshops <http://www.ortop.org/res.htm#work> . This is a requirement for grant teams with rookie coaches and all teams receiving an NXT robot.
 - Or attend SuperQuest LEGO Robotics week long training (www.techstart.org)
- **July – Sept.**
 - Do the paperwork associated with the grant.
 - Make sure you or ORTOP has registered your team. Know your FLL Team #.
 - Plan for transporting your team to the Qualifying Tournament.
 - Buy materials to build a competition board to suit your needs.
 - <http://www.firstlegoleague.org/default.aspx?pid=23700>
 - HINT: The supports underneath are nice but not necessary. Your table can even consist of hinged 2" x 4' to form a border and place the mat on the floor. What ever works for your location!

- **Summer:** Arrange for a meeting place and schedule. Recruit other adults to help you with the team!
- **Spring – mid-Sept:**
 - Read your FLL coach handbook!
 - Look at robot and tournament materials as they arrive.
 - Recruit team members; try to include girls and minority students as estimated in the grant application.
 - Create a Meeting Plan and make parents/students aware of the ground rules. Some coaches put this in writing. It's your decision.
 - Conduct team meetings for at least 90 minutes per week from September (early October) until the Qualifying tournament. First Task – Assemble the Climate Connections Mission Models and figure out a Team Name!
 - New Teams usually attempt 2 – 4 missions their first year and complete The Project presentation. Only 3 teams have completed all of the missions in ORTOP's seven years!
- **September 5th** – FIRST LEGO League releases the Climate Connections Challenge to the WORLD!
- **Oct 1 – 12:** Register your team for a ORTOP Qualifying Tournament
- **November:** Practice the Project in front of other people if possible, practice doing your robot runs in 2.5 minutes, practice answering judge questions.
- **December:** Attend the Qualifying Tournament and have FUN!

What is the Tournament like?

Check out this video! <http://www.usfirst.org/what/fll/default.aspx?id=390>

- The Qualifying Tournament is divided into 4 Parts. Each of these parts earn points toward awards.
 - **Robot Performance** – making your robot run on the board and complete its programmed missions.
 - **Technical Interview** – meet with a friendly panel of judges who ask your team about their robot and its programming
 - **Project Interview** – make your 5-minute Power Puzzle Project Presentation in front of another friendly panel of judges and answer questions
 - **Teamwork** – teamwork and gracious professionalism are key values of FLL. Teamwork is assessed by the technical judges, presentation judges and roving tournament judges.
 - The tournament also has opening and closing ceremonies, an opportunity to meet other teams, see other robots, experience new things. Compete in friendly, sports-like tournament with the knowledge that what is discovered is more important than what is won.
 - Grant teams are expected to attend a qualifying tournament. Whatever your team's "state of ready"attend the tournament!

WHAT SHOULD I TRY TO ACCOMPLISH?

The team needs you to give them guidance and provide structure, encouragement, and most of all a fun experience. You should help your kids have fun with their robot while they get comfortable with technology and learn something about a real world problem. Team members win just for participating.

Resources:

- FIRST LEGO League provides an online forum for coaches.
- FLL Q & A webpage.
- ORTOP requires grant coaches to attend our free workshops.
- Official FLL Coach info will be sent to your email box on a as needed basis.
- The ORTOP Workshop Instructors welcome your questions during the season.
- ORTOPCoaches listserv: ORTOP will keep you updated of important information and tips!
- ORTOP tries to recruit industry engineers and technical people to be technical mentors for teams. A few people set up each year and we try to match teams to mentors.