

I chose the FIRST Lego League (FLL) competition because I want to know more about it. I borrowed the NXT set from one of our elementary schools who participates and I hope to coach the competition next fall and perhaps carry it into our middle school in future years. After researching these competitions, I can't wait to get started!



FLL is the result of an alliance between For Inspiration and Recognition of Science and Technology (FIRST organization) and the Lego Company. FIRST was founded by Dean Kamen, a New Hampshire resident and he is probably best known for inventing the Segway scooter and a number of important medical devices including a wheel chair that can go up stairs. FLL was founded in 1998 and currently has 90,000 students across 45 countries participating. FIRST sponsors several competitions for different age groups and the FLL competition is for the 9-14 year old group. Each year teams form to research and solve a problem based on that year's challenge theme and then present their research and solutions and build a robot based on Lego parts and technology using engineering concepts.

"We learn and compete like crazy, but treat one another with respect and kindness in the process" is FIRST's description of their philosophy of *gracious professionalism*. The FLL core values are:

- We are a team.
- We do the work to find the solutions with guidance from our coaches and mentors.
- We honor the spirit of friendly competition.
- What we discover is more important than what we win.
- We share our experiences with others.
- We display gracious professionalism in everything we do.
- We have fun!

Any organization can form a team and a child can only participate on one team that year. Teams consist of 3 to 10 children and they cannot be older than 14 as of Jan. 1 of the competition year. Coaches are recruited and trained with specific principles that they are there to organize, teach and assist but not direct - ideas and solutions must come from the students.

The program is scheduled at the same time each year, culminating in state, national and international competitions. The challenge for that year is released in September, teams work for about eight weeks and then meet for local, regional and national competitions November through January. The World Festival is in April. Challenge themes are based on real-world problems.

The typical costs of the teams that participate are: \$280 for a LEGO robot kit, \$200 per team for FIRST LEGO League National Registration, \$65 for that year's field setup kit, \$50 for a practice table for the setup (one-time cost), and access to a computer with software to program the robot that must have the appropriate hardware and OS (generally any Windows or Apple laptop that's <3 yrs. old should work) but if you don't have one available, you may have to purchase one and could then use it again each year. Some teams purchase t-shirts that cost \$8-10 per

person. Also teams must support travel expenses to the competition(s). Additional tournaments have additional entry fees and travel expenses.

The FLL divides the awards into four main categories: technical, team presentation, special recognition, and judges' awards. Many organizations have websites that share information, post schedules and display recognition for student awards, volunteer participation and sponsor contributions. Some of these websites offer tremendous resources to other teams – training resources, programming solutions, videos of tournaments, etc. – all in the spirit of collaboration and doing what helps students learn and have fun doing so.

FIRST just announced the 2007 Challenge Theme related to power and alternative energy resources:

Meeting the Global Demand How do our personal energy choices to heat our homes, fuel our cars, charge our cell phones, power our computers, or even download music to our iPods impact the environment, economy, and life around the globe? Which resources should we use and why? Explore how energy production and consumption choices affect the planet and our quality of life today, tomorrow, and for future generations. Can FIRST LEGO League teams find the ultimate solution to this global Power Puzzle?

Prior challenges can be viewed at the FLL Challenge History web page:

<http://www.firstlegoleague.org/default.aspx?pid=60>

I viewed several videos and read several blogs and journals of coaches that displayed the enthusiasm and active participation of students learning and having a great time. These competitions provide a structure and activities for students to get more exposure to math, science and technology, which is so valuable for 21st century learners. Parts of the activities involve research, presentation and communication so students can gain valuable real-life experience honing these essential skills. The entire activity is geared around creative problem-solving and students must learn and work together to propose solutions, try them out and fine tune them to get them to work. Tournaments provide a competitive environment that develops similar skills you find in sports such as sportsmanship, team building and collaboration skills, school spirit, personal achievement, hard work leading to accomplishment, and building self-confidence. The students who participate in FLL activities may or may not be involved in sports so it broadens the exposure students may have to these kinds of team activities.

Resources for research:

High Tech Kids: <http://www.hightechkids.org>

How Stuff Works (FLL page #7): <http://science.howstuffworks.com/first7.htm>

Carnegie Mellon Robotics Academy - FIRST Nano Tech. video – good description of FIRST: <http://www-education.rec.ri.cmu.edu/content/compet/index.html>

First Lego League: <http://www.firstlegoleague.org>