



ORTOP PROGRAM OVERVIEW

Vision

All Oregon youth will have the opportunity to experience the excitement and rewards of creating new solutions to real-world challenges by participating in a hands-on science and engineering team project.

Mission

To open doors to the worlds of science and technology for Oregon's youth, by delivering the FIRST LEGO League, Junior FIRST LEGO League and FIRST Tech Challenge programs to 6 to 18 year old children with a focus on reaching those who might not otherwise participate because of their race, gender, or socio-economic status.



Background

Oregon Robotics Tournament and Outreach Program (ORTOP) is one of Oregon's fastest growing youth programs. Since its inception in 2001, the FIRST LEGO League (FLL) program has grown five fold. In 2008, 400 teams, made up of 3,000 9- to 14 year olds, will participated in 21 FLL Qualifying Tournaments in December in Oregon and SW Washington. The top 22% of the teams will compete at the Intel Oregon FLL 2008 Championship Tournaments. In 2008, ORTOP remains the largest FLL program in the United States and Canada; and the fifth largest in the world.

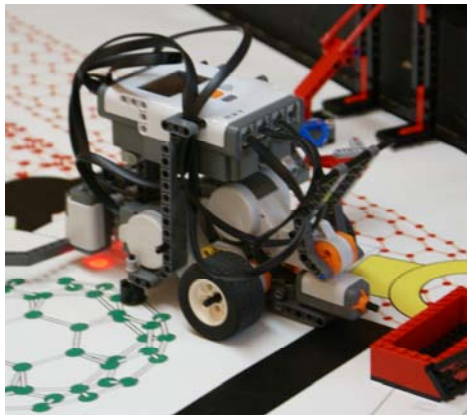
ORTOP added the Junior *FIRST* LEGO League (Jr.FLL) program in 2006 with 6- to 9 year old youngsters participating. In 2006 ORTOP also added the *FIRST* Tech Challenge (FTC) program targeted at kids age 14 through high school. All three programs experienced significant growth in 2007.

ORTOP offers these three pre-engineering programs to help young students begin preparing for high-tech careers at an early age. Oregon technology corporations and industry associations collaborate with the Oregon University System and major youth organizations to implement the program. Detailed information is available at www.ortop.org.



Each year FLL and Jr.FLL defines a Challenge that drives the activities of the teams.

- 2001: The Arctic Impact Challenge encouraged kids to think creatively about working in an Arctic environment.
- 2002: The City Sights Challenge focused on environmental concerns in the city.
- 2003: The Mission Mars Challenge let kids explore Mars like NASA scientists.
- 2004: The NO LIMITS Challenge asked teams to invent ways to help people with different levels of physical ability.
- 2005: The Ocean Odyssey Challenge asked teams to look for ways to sustain the health, biodiversity, and productivity of the world’s oceans.
- 2006: NanoQuest asked teams to explore amazing new technologies that start in the Nano world and lead to things we do and use every day.
- 2007: Power Puzzle asked teams to explore how energy production and consumption choices affect the planet and our quality of life today, tomorrow, and for future generations.
- **2008: Climate Connections (Building a Global Game Plan) will ask teams to explore why many experts believe the earth's climate is changing and how these changes impact us and our planet.**



The FLL Learning Opportunity

Children ages 9 to 14 work in small FLL teams and use inexpensive LEGO kits to construct a working robot. With the help of coaches and mentors, the team members use engineering principles to design, build and program their robots. The teams develop their robots to complete as many missions as they can on the 4- by 8-foot Challenge playing field. They also complete a research assignment related to the year’s Challenge theme. The teams are given about 8 weeks to prepare for the tournament, including constructing the robot and completing the required scientific research

project. The teams can consist of designers, builders, programmers, documenters, marketers, and a team leader.

The Jr.FLL teams solve a mini challenge based on the FLL theme for the year. An adult mentor helps the team solve the challenge using LEGO elements and helps the team prepare a “Show Me” poster for display at the JFLL Expo.



Children who have “aged out” of FLL continue through high school in the FTC program. Here they design and build a real working robot from erector set-like technology that features sensors, servo motors and Tetrix building materials. The robot performs missions both

autonomously under wireless control in a 12 by 12 foot arena.



and

The ORTOP FLL Tournaments

The efforts of the teams culminate in the tournaments organized by ORTOP. During a tournament, each team participates in three different activities:

- Demonstrating their solution on the Challenge playing field,
- Presenting the results of their research project to a team of presentation judges
- Discussing their design with a panel of technical judges.

Teamwork judges assess the team throughout these activities. The judges are professionals from the community who have volunteered their time to provide feedback to these youngsters.



The Locations

In 2008, qualifying FLL tournaments (the qualifying events for the Championship tournament) will be held in Corvallis, Hillsboro, LaGrande, Klamath Falls, Oregon City, Portland, Bend, Roseburg, Salem, Vancouver (WA), and Wilsonville. The 2008 FLL Championship tournaments will be held in Hillsboro on January 17 and 18, 2009. A Jr.FLL Expo will be held at OMSI in Portland on January 10, 2009. Location(s) of the *FIRST* Tech Challenge Tournament will be announced in Fall 2008.

Scholarship Program

ORTOP offers scholarships to schools and community organizations to help pay for FLL and FTC tournament fees, robot kits and materials. In 2007, with the help of corporate sponsors and private donors, ORTOP awarded 111 full and partial grants to teams throughout Oregon based on financial need and inclusion of students traditionally not represented in Oregon's high tech workforce.

Adult Workshops

ORTOP provides free workshops for prospective coaches and mentors starting in June and running through September. These workshops provide hands-on training in robot construction and programming. Workshops will be offered in Portland and several communities that host qualifying tournaments.

International Program

FIRST and The LEGO® Company created *FIRST* LEGO League based on their common belief that fun and learning go hand in hand, and that an inspired mind can accomplish anything it sets out to do. What you discover is more important than what you win. Each year, students from countries around the world form teams to research, design, build and program robots to solve real-world problems using LEGO bricks, motors and gears. They apply engineering, computer-programming principles, and presentation techniques as they construct, program and research their unique robotic inventions.

2007 ORTOP Season Sponsors

Title
Sponsor

Platinum ► Mentor Graphics, RadiSys, Rockwell Collins

Gold ► BPA, Catlin Gabel, Fred Meyer, Hillsboro School District, Pacific Power Foundation, PGE Foundation

Silver ► ADP, EOU, ESCO, IBM, OIT, ONAMI, Oregon University System, PHA, Tektronix, Vernier Software & Technology, Whittier Consulting Group

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