



FIRST® LEGO® League, a team engineering and science program for kids 9 – 14 years old.

WHAT DOES A FIRST LEGO LEAGUE TEAM DO?



Each year *FIRST* LEGO League releases a new Challenge for our teams. The Challenge is released in late August and focuses on a different scientific topic or question each year. You don't need to wait until September to get started though. Knowing what to expect will help your team hit the ground running. The Challenge has four parts: the **Robot Game**, **Robot Design**, the **Project**, and the **FIRST LEGO League Core Values**.

Robot Design and the Robot Game

In the Robot Game, the kids design, build and program an autonomous (no remote control) LEGO MINDSTORMS® robot to score points by performing mission tasks. These missions will be inspired by the Challenge theme. Missions require the robot to navigate, capture, transport, or deliver objects on a printed mat (the Field). The robot has 2 ½ minutes to complete as many missions as possible. At the tournaments teams meet with a panel of judges to discuss their Robot Design, their strategies for solving the Robot Game, Mechanical Design and their programming solution.



Project

Through the Project, teams learn more about the science behind the Challenge theme. The kids use their creativity to design a solution (or modify an existing solution) to solve a real-world problem. We even give you a head start – we tell you the theme months ahead of time! Even though you will not know the exact details of the Challenge, you can begin researching the theme with your team as soon as it is announced.



Core Values

While *FIRST* LEGO League teams work on the Robot Game and the Project each year, they are guided by the FIRST LEGO League Core Values. The Core Values are part of what makes *FIRST* LEGO League so special, because kids compete like crazy against the game but still respect their teammates, coaches, and even their “competitors.” Don't forget, our last (and maybe most important) Core Value is “We have FUN!”



Preparing for a Tournament

Teams meet one to three times a week starting in September to work on their Robot Design for the Robot Game, the Project and Core Values. In Oregon, all teams are invited to celebrate their accomplishments at an *FIRST* LEGO LEAGUE Qualifying Tournament. 24+ tournaments will be held around Oregon during the 1st two weekends of December. It is a friendly competition with the emphasis on what a team learned and accomplished. About 25% of the teams are invited to compete at the Intel Oregon *FIRST* LEGO LEAGUE Championship in January.



Who are the coaches? Any adult willing to facilitate the thrills and spills of technology fun with kids. No technical background necessary. All teams must have two lead coaches who have passed the free *FIRST* Youth Protection Certification. Oregon Robotics Tournament and Outreach Program (ORTOP) offers adult training workshops.

What is a FIRST®LEGO® League team and what do they do?

If you visited a FIRST LEGO League team meeting you would see 3-10 kids, ages 9 – 14, working with a EV3 or NXT LEGO MINDSTORMS 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 EV3 or NXT brick that acts as the robot's computer. The robot would also have 3 or 4 wheels to help it move around.



Other kids would be at a 4' x 8' mat in a FIRST LEGO LEAGUE competition table with annual challenge mat 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.

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 World Class Project Challenge.



What is in an EV3 FIRST LEGO League competition kit:

Base Kit - with an EV3 Brick (robot's onboard computer), sensors, wires, motors and some LEGO Technics parts.

Resource Kit – with many more LEGO Technics parts for building

Software – to program the robot to do things. Free download online for laptop, Chromebook, or tablet.

[Video from a FIRST LEGO League](#)

See this [link for Challenge information](#)

What every FIRST LEGO LEAGUE team needs:

- A place to practice at least once a week, twice a week is better.
- A computer that can run the EV3 or NXT software, a laptop is recommended.
- Two committed coaches who complete the free background check. Optional but is better.
- FIRST LEGO LEAGUE Challenge Table for the competition mat. Optional but is better.
- FIRST LEGO LEAGUE Competition EV3 /NXT Robot Set
- Annual Challenge Kit – includes Mat and LEGO Mission Model Kit
- A paid national FIRST LEGO LEAGUE Team Registration
- A paid ORTOP



[competition](#)

Model Kit
• A paid ORTOP

What are the Coaches doing?

The coaches are facilitating the team's progress, helping them with teamwork skills, helping them find resources, teaching the robot building and programming skills they learned at the ORTOP coach workshops, serving snacks, keeping the team on task. It is up to the kids to solve the challenge. The Coaches are encouraged to enlist other adults to help with these activities.

For [Workshop Information](http://www.ortop.org/fll/resWorkshops.htm): www.ortop.org/fll/resWorkshops.htm



Attend a qualifying tournament. Whatever your team's "state of ready"attend the tournament!

WHAT SHOULD WE 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. Most rookie teams attempt 2 – 3 board missions.

Resources:

- FIRST LEGO LEAGUE has developed new [resources on their website](#), on [youtube](#), with [LEGO Education](#), and through schology.
- FIRST LEGO LEAGUE [Challenge Resource page](#)
- ORTOP requires scholarship coaches to attend our free workshops.
- Official FIRST LEGO LEAGUE Coach info will be sent to your email throughout the season.
- The ORTOP Workshop Instructors welcome your questions during the season.
- ortopfll newsletter and blog group: ORTOP will keep you updated of important information, Oregon events, and tips!



[FIRST LEGO League International website-www.firstinspires.org](http://www.firstinspires.org)

[FIRST LEGO League Oregon information and website-www.ortop.org/fll](http://www.ortop.org/fll)

Additional questions: Contact Loridee Wetzel at Loridee-Wetzel@ortop.org – 503-486-7622

