

FIRST
LEGO
LEAGUE

Coaches' Handbook





My Team

Team number: _____ Team name: _____

Team coaches: _____

Team mentors: _____

My team meets at _____ (location)

from: _____ (AM/PM) to _____ (AM/PM) every _____ (day/days of week)

Meeting goals

Week 1: _____

Week 2: _____

Week 3: _____

Week 4: _____

Week 5: _____

Week 6: _____

Week 7: _____

Week 8: _____

My event

Event date: _____ Event location: _____

Start time: _____ End time: _____ Event organizer: _____

FIRST® LEGO® League

Coaches' Handbook



14th Edition, 2018 printing

www.firstlegoleague.org

FIRST® LEGO® League is the result of an exciting alliance between *FIRST®* and the LEGO Group.



2018 *FIRST*® LEGO® League Coaches' Handbook

14TH EDITION, 2018 PRINTING

FIRST® LEGO® League

www.firstlegoleague.org

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LOGO USAGE

Refer to the branding standards on the *FIRST* website at www.firstinspires.org/brand.

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Team Registration Payments

FIRST® FINANCE

Phone: 1-800-871-8326 x 563

Fax: (603) 206-2079

Email: ar@firstinspires.org

Mail Checks & Purchase Orders to:

FIRST

Attn: Finance

200 Bedford Street

Manchester, NH 03101 USA

LEGO® Education Product

LEGO EDUCATION (U.S. TEAMS ONLY)

Phone: 1-800-362-4308

Fax: 1-888-534-6784

Email: orders@legoeducation.us

Mail Purchase Orders to:

LEGO Education

501 Boylston St Suite 4103

Boston, MA 02116 USA

Mail Checks (ONLY) to:

LEGO Education

13569 Collections Center Drive

Chicago, IL 60693 USA

SPECTRUM EDUCATIONAL SUPPLIES LTD (CANADIAN TEAMS OUTSIDE QUEBEC)

Phone: 1-800-668-0600

Fax: 1-800-668-0602

Email: customerservice@spectrumed.com

Address: SPECTRUM Educational Supplies Ltd.
150 Pony Drive
Newmarket, Ontario L3Y 7B6 Canada

CONTINUED»

BRAULT & BOUTHILLIER (CANADIAN TEAMS IN QUEBEC)

Phone: 1-800-361-0378 Fax: 1-514-273-8627
or 1-514-273-9186

Address: Attn: Eric Patenaude
700 Avenue Beaumont
Montreal, Quebec H3N 1V5 Canada

Replacement LEGO® Parts

Web: <http://service.lego.com>

Phone: 1-800-422-5346

Questions on the Challenge or Judging

FIRST® LEGO® League Robot Game Questions: fillrobotgame@firstinspires.org

FIRST® LEGO® League Project Questions: fillprojects@firstinspires.org

FIRST® LEGO® League Judging Questions: filljudge@firstinspires.org

For event questions, contact your local Partner. Find your Partner at
<https://www.firstinspires.org/about/contact-us>.

Questions on LEGO® MINDSTORMS®

Support: <https://www.lego.com/en-us/mindstorms/support>

***FIRST*® LEGO® League Team Support (General Questions and Information)**

Phone: 1-800-871-8326

Email: firstlegoleague@firstinspires.org

Websites: www.firstlegoleague.org
www.firstinspires.org/fll (Live Chat Support Available)

Find your Local Contact by Country and Region

Website: www.firstlegoleague.org

Running your team

➔ **New coaches, start here** *FIRST* Steps (step by step meeting modules):
<http://info.firstinspires.org/fll-first-steps-request>

Diversity & Inclusion training

<https://www.firstinspires.org/resource-library/training-equity-diversity-inclusion>

Participation rules

<http://www.firstlegoleague.org/challenge#block-block-17>

Team Management downloads

<https://www.firstinspires.org/resource-library/fll/team-management-resources>

- ➔ Event Guide for Teams (Available Aug. 1)
- ➔ Robot Game Rules
- ➔ Budget Worksheet

LEGO® MINDSTORMS® EV3 curricula and activities

<http://legoeducation.com/downloads>

Key release dates

Challenge Materials <http://firstlegoleague.org/challenge>

- ➔ **Robot Game Mission Model Build instructions – Aug. 1**
- ➔ **Challenge – Overview of Robot Game Missions and Project Parameters – Aug. 1**
- ➔ **Challenge Guide – Rules and Resources for the Project and Robot Game – Aug.1**
- ➔ **Field Setup – Where to place your Mission Models – Aug. 1**

Event Guide for Teams

What to expect and how to prepare for an Official Event – **Aug. 1**

FIRST LEGO League Tournament Dates

Check with your local *FIRST* LEGO League Partner on tournament dates.

Find your Partner at <https://www.firstinspires.org/about/contact-us>



★ TIP *Do not worry if you are not an expert on some skill or aspect of the Challenge. You can work through it with your team. In fact, children love to solve problems that befuddle adults. Encourage them to find their own answers.*

Fundraising

Fundraising Toolkit:

<https://www.firstinspires.org/resource-library/fundraising-toolkit>

Event preparation

Community events

Community Event Guide – Access via *FIRST* Steps

<http://info.firstinspires.org/fll-first-steps-request>

Official events

Awards: <https://www.firstinspires.org/robotics/fll/awards>

Judging FAQ: <http://www.firstlegoleague.org/challenge>

Judging rubrics: <https://www.firstinspires.org/resource-library/fll/judging-rubrics>

Event Guide for Teams (available Aug. 1): <https://www.firstinspires.org/resource-library/fll/team-management-resources>

Youth Protection Program: <https://www.firstinspires.org/youth-protection>

Connecting with others

Team Social Media Guide

https://www.firstinspires.org/sites/default/files/uploads/resource_library/fll/team-social-media-guide-flljr-fll.pdf

Channels

 Blog fllblog.wordpress.com

 Instagram

FIRST® – www.instagram.com/legoeducation/first_official

LEGO® Education – www.instagram.com/legoeducation/

 Pinterest

FIRST – www.pinterest.com/firstinspires/

LEGO Education – www.pinterest.com/legoeducation/

 Twitter

FIRST – twitter.com/FIRSTtweets

FIRST® LEGO® League – twitter.com/firstlegoleague

LEGO® Education – twitter.com/lego_education

 YouTube

FIRST – www.youtube.com/user/FIRSTWorldTube

FIRST LEGO League – www.youtube.com/user/fllglobal

LEGO Education – www.youtube.com/user/LEGOeducationUS

Thank you, coach!

Coaches are a huge part of what makes *FIRST*® LEGO® League possible. Whether you are a teacher, parent, or volunteer, you help us bring *FIRST* LEGO League to your team. This program would not succeed without you. We just cannot say it enough – we think you are awesome!



What is *FIRST*® LEGO® League? [VIDEO](#)

***The Project and the Robot Game are what the students do.
FIRST Core Values are how they do it.***

***FIRST*® Core Values**

We express the *FIRST*® philosophies of *Gracious Professionalism*® and *Coopertition*® through our *FIRST*® Core Values:

- ✦ **Discovery:** We explore new skills and ideas.
- ✦ **Innovation:** We use creativity and persistence to solve problems.
- ✦ **Impact:** We apply what we learn to improve our world.
- ✦ **Inclusion:** We respect each other and embrace our differences.
- ✦ **Teamwork:** We are stronger when we work together.
- ✦ **Fun:** We enjoy and celebrate what we do!

The ***FIRST* Core Values** help distinguish *FIRST* and *FIRST* LEGO League from other programs. By embracing the *FIRST* Core Values, participants learn that friendly competition and mutual gain are not separate goals, and that helping each other is the foundation of teamwork. Incorporating teamwork activities into each meeting will help your team learn to work together while having fun.

Suggested *FIRST* Core Values activities are included in every module of *FIRST* Steps (<http://info.firstinspires.org/fll-first-steps-request>).

The Challenge

In the **Robot Game**, teams design, build, program and test autonomous robots using LEGO® MINDSTORMS® technology. The Robot Game playing field reflects the real-world theme for this season. Teams select which missions to solve in **2½ minute** matches. Season-specific rules release with the Challenge but some are evergreen (<https://www.youtube.com/watch?v=chSLW55qBAA>).



TIP

Autonomous means the robot moves and operates by itself.

In the **Project**, teams **research** a real-world problem in the field of the season's Challenge theme. Then they **create** an innovative solution to that problem (either by creating something that doesn't exist or building upon something that does). Teams **share** their findings with others. Teams that go to events must prepare a 5-minute **presentation** about their Project. Learn more about the Project in these videos (<https://www.youtube.com/playlist?list=PLD25D83E836AB3AEB>).

FIRST LEGO League events

Official events are a great way to celebrate accomplishments with other teams, family, and friends. Contact your Partner (<https://www.firstinspires.org/about/contact-us>) to find out more about the event schedule in your area or download our Community Event Guide to host an unofficial event at your school or organization (<http://info.firstinspires.org/fll-first-steps-request>).

If you plan to attend an official event, download the Event Guide for Teams (<http://www.firstinspires.org/resource-library/fll/team-management-resources>) on or after **Aug. 1**.

FIRST LEGO League Partners Make it Possible

FIRST LEGO League relies on great people to run the program at many levels, from managing a region to coaching an individual team. We call the leaders in each region the Partners. They are a tremendous resource for you as a coach, and FIRST LEGO League would not exist without them.

Our Partners agree to maintain FIRST LEGO League global standards for tournaments, the Challenge, and overall program administration. Your local Partner is an important resource for information. Contact your Partner about training, events, or other resources available in your area.



FIND ONLINE

Find your FIRST LEGO League Partner at

<https://www.firstinspires.org/about/contact-us>

Pre-Season Preparation

- Register** your team with *FIRST* LEGO League (Check your region's website for instructions on how to do this).
- Pay your registration fee and **order** the materials you need.
- Provide a valid email address when you register, and **check that inbox** often throughout the season for information from *FIRST* LEGO League and your Partner.
- Review** the *FIRST* Core Values. ([Chapter 2, Page 11](#))
- Decide** how team members will be identified or selected
- Identify** at least 1 computer your team may use (must have internet access).
- Install** robot programming software on the computer(s) your team will use.
- Build** your Robot Game table (or just the borders).
- Find out** about your region's tournament structure and event registration process or download our Community Event Guide to help you plan your own event.

Begin Meeting with Your Team

- Check your email!**
- Create** a meeting schedule
- Review** the *FIRST* Core Values with parents and team members (and keep discussing them at each meeting!).
- Set up** a practice competition area and storage for equipment between meetings.
- Have team members **begin researching** this year's Challenge theme to get a head start on the Project.

After Challenge Release (August 1)

- Check** your email regularly for communication from *FIRST* LEGO League.
- Download** the Challenge from www.firstlegoleague.org and review it as a team.
- Download** the Mission Model building instructions on www.firstlegoleague.org and **build** the Mission Models from your Challenge Set.

- Have team members begin **designing, building,** and **programming** your team's robot.
- Have team members begin **brainstorming** ideas for innovative solutions.
- Register** for an official event. Contact your *FIRST* LEGO League Partner if you are not sure how to apply for a tournament in your area.
- Review** the rubrics that will be used to judge your team at tournaments. Discuss them with your team.
- Assign** a team member to check the Challenge Updates and Judging FAQ frequently for any new information. (www.firstlegoleague.org)
- Practice, practice, practice!**
- Prepare** any documents required by your tournament organizers.
- Make a plan to **celebrate** at the end of your season.

Optional Tasks

- Complete several teambuilding activities with your team.
- Have your team build a practice robot and try some of the programming tutorials that come with your LEGO MINDSTORMS robot set or online. (www.legoeducation.com/downloads)
- Attend an unofficial event or practice scrimmage if available in your area.

What's **FIRST**?

FIRST® programs inspire innovation and leadership through engaging, hands-on robotics challenges developed to ignite curiosity and passion in students in grades K-12.

**FIRST
LEGO
LEAGUE JR.**

Ages 6-9 (Grades K-4)

**FIRST
LEGO
LEAGUE**

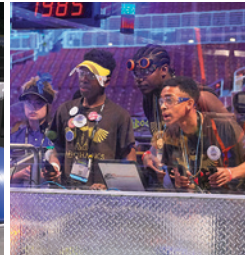
Ages 9-16 (Grades 4-8)
*Ages vary by country

**FIRST
TECH
CHALLENGE**

Ages 12-18 (Grades 7-12)

**FIRST
ROBOTICS
COMPETITION**

Ages 14-18 (Grades 9-12)



FIRST is the world's leading child-serving nonprofit advancing science, technology, engineering, and math (STEM). For nearly 30 years, *FIRST* has evolved into a global movement by engaging millions of people with a proven game-changer for preparing kids to solve the world's greatest problems.

FIRST builds powerful mentorship relationships between young people and STEM professionals, helping kids gain confidence to explore the innovation process while they learn valuable science, engineering, technology, teamwork, and problem-solving skills.

At the heart of *FIRST* are its *FIRST* Core Values, which emphasize the contributions of others, friendly sportsmanship, teamwork, learning, and community involvement. These include: *Gracious Professionalism*® – Respect for others, being a good sport, and sharing what you learn. *Coopertition*® – Competing hard, but also helping the other teams.

FIRST creates the people who will change the world – today and tomorrow.



FOR INSPIRATION & RECOGNITION OF SCIENCE & TECHNOLOGY

firstinspires.org