



FIRST[®]
Frequently Asked Questions
2024

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What is FIRST®?

FIRST® is a robotics community that prepares young people for the future and the world's leading youth-serving nonprofit advancing science, technology, engineering, and math (STEM). Founded by inventor Dean Kamen in 1989, *FIRST* has evolved into a global movement by combining the excitement of traditional sports with the rigor of STEM learning, engaging millions of people with programs that have a proven impact on learning, interest, and skill-building inside and outside of the classroom. *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. *FIRST* creates the people who will change the world – today and tomorrow.

FIRST offers a suite of robotics programs for PreK-12 (ages 4-18): *FIRST®* Robotics Competition for grades 9-12 (ages 14 to 18); *FIRST®* Tech Challenge for grades 7-12 (ages 12 to 18); and *FIRST®* LEGO® League with divisions spanning grades PreK-8 (ages 4 to 16). Students can join any of our three programs based on age or grade level. Ages may vary by region. Each program can be facilitated in school or after-school.

Who are some of the organizations that sponsor FIRST?

FIRST is supported by a strong network of corporations, educational and professional institutions, and individuals. Industry-leading companies – including more than 200 of the *Fortune* 500 companies – provide funding, mentorship time and talent, volunteerism, and equipment, and help make *FIRST* more accessible to students all over the world.

***FIRST* Strategic Partners are:**

The 3M Company, Apple, The Argosy Foundation, BAE Systems, Bechtel Group Foundation, The Boeing Company, Bosch, Caterpillar, Inc., DEKA Research & Development Corporation, DoD STEM, Dow, FedEx Corporation, Ford Motor Company, The Gene Haas Foundation, General Motors Company, Google.org, John Deere, LEGO® Education, National Aeronautics and Space Administration (NASA), NI, Novelis Inc., Qualcomm Incorporated, RTX, Rockwell Automation, Inc., TE Connectivity, and The Walt Disney Company

***FIRST* Founding Sponsors are:**

Aptiv, Baxter International Inc., Boston Scientific Corporation, Chrysler, DEKA Research & Development Corporation, General Motors Company, Johnson & Johnson Family of Corporations, Kleiner Perkins, Motorola Solutions Foundation, and Xerox Corporation.

***FIRST* has Strategic Alliances in place with:**

Alpha Omega Epsilon, Automation Federation/ISA, Boys & Girls Club of America, Girl Scouts of the USA, National 4-H Council, National Center for Women & Information Technology (NCWIT), National Society of Black Engineers (NSBE), Sigma Phi Delta, Engineering Fraternity, Society

for Information Management (SIM), Society of Hispanic Professional Engineers (SHPE), Society of Women Engineers (SWE), and Triangle Fraternity.

Who participates in *FIRST* programs?

- Approximately 3,340 teams of high-school students competed in ***FIRST*[®] Robotics Competition** in 32 countries in the 2022-2023 season.
- 87,400+ students in Grades 7-12 competed in ***FIRST*[®] Tech Challenge** in 67 countries in 2022-2023.
- 497,000+ students, ages 4-16 (age varies by country), participated in ***FIRST*[®] LEGO[®] League** in 92 countries in 2022-2023.
- Approximately 83,600 high school student participants competed in ***FIRST*[®] Robotics Competition** in 32 countries in the 2022-2023 season.
- 87,400+ students in Grades 7-12 competed in ***FIRST*[®] Tech Challenge** in 67 countries in 2022-2023.
- 497,000+ students, ages 4-16 (age varies by country), participated in ***FIRST*[®] LEGO[®] League** in 92 countries in 2022-2023.

Who manages the teams and events?

FIRST is truly a volunteer-driven organization. For the 2022-2023 season, more than 316,000 volunteer roles were filled, with contributions in areas including mentorship, event management, recruitment, and team management. The growth and success of *FIRST* is a direct result of the efforts of the mentors, parents, teachers, community leaders, and citizens who volunteer their time and talent.

How can volunteers get involved?

The best ways to start discovering the rewards of volunteering with *FIRST* are:

- Visit the [FIRST event search](#) to find a free event close to you.
- See the [FIRST Volunteer Handbook](#) and the [Volunteering with FIRST](#) introductory training.

Different ways to help:

- [Event Volunteers](#) - Run seasonal events at the local, regional, and national levels; take on a variety of roles from judging and field reset to crowd control and safety glasses attendant.
- [FIRST Championship Volunteers](#) - Support the annual *FIRST* Championship event with choices of many available volunteer positions.
- [Mentors & Coaches](#) - Guide students who participate on *FIRST* teams as they work through the challenges of each season; offer off-season support and guidance. Individuals interested in mentoring teams locally and/or virtually may register with the [FIRST Mentor Network sponsored by NI](#).

Contact *FIRST*:

- Phone: 1-800-871-8326 or email volunteer@firstinspires.org
- Website: www.firstinspires.org/ways-to-help/volunteer

What are the Purpose, Vision, and Mission of *FIRST*?

- **Purpose:** *FIRST* exists to prepare the young people of today for the world of tomorrow.

- **Vision:** To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders.
- **Mission:** The mission of *FIRST* is to provide life-changing robotics programs that give young people the skills, confidence, and resilience to build a better world.

What is *Gracious Professionalism*®?

Gracious Professionalism® is part of the ethos of *FIRST*. The idea and phrase are found throughout *FIRST*, but no one was a stronger champion than the late *FIRST* Distinguished Advisor, Dr. Woodie Flowers.

“Gracious Professionalism is a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community. With Gracious Professionalism, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete like crazy but treat one another with respect and kindness in the process.”

What is *Coopertition*®?

Coopertition® fosters innovation by promoting unqualified kindness and respect in the face of intense competition. At *FIRST*, *Coopertition* means that teams help and cooperate with each other, even as they compete. It's about learning from teammates, teaching others, collaborating with mentors, managing and being managed. *Coopertition* embodies the spirit of competing while assisting and enabling others whenever possible.

Who are *FIRST* Alumni?

FIRST alumni are high school graduates who participated in high school-level *FIRST* Tech Challenge and/or *FIRST* Robotics Competition. Participants and alumni of *FIRST* programs gain access to education and career discovery opportunities, connections to exclusive scholarships and employers, and a place in the *FIRST* community for life. Visit www.firstinspires.org/alumni for more details.

What does research show about participation in *FIRST*?

More than a decade of data and research shows that exposing kids to fun, exciting *FIRST* programs builds 21st century work skills and greatly increases their motivation to seek education and careers in STEM fields. Learn more at www.firstinspires.org/about/impact.

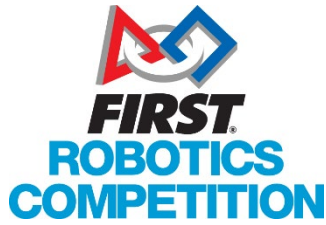
FIRST believes STEM is for everyone and all youth can benefit from our impact-proven programs. As part of the [More Than](#) campaign (see below for more information), an August 2022 consumer survey completed by more than 1,000 individuals 13-18 years old in the U.S. found when it comes to extracurriculars in STEM, 29% of kids don't feel smart enough to join a STEM-related program. This comes despite 54% of students stating they did, or would, want to join a STEM or robotics extracurricular to learn a new skill. This survey was performed by Allison+Partners Performance+Intelligence.

What is the *More Than* campaign and the inspiration behind it?

More Than is an awareness campaign from the global youth non-profit, *FIRST*. *More Than* aims to dismantle labels for young people and promote self-esteem through STEM. The campaign launched on September 26, 2022, with a new, emotive PSA and a full-page ad in The [New York](#)

[Times](#) calling for adults to encourage the young people in their life to engage in new opportunities that might seem outside their comfort zone.

The concept of the campaign is rooted in insights from surveys gathered by listening to students, educators, and experts about children's and young people's barriers to success. Findings revealed American children are learning to doubt themselves because of fear or shame from the judgment of others. These feelings hold them back from exploring their interests, passions, and potential at a formative age. Sometimes, and often by accident, children are made to feel like they aren't good enough or the "right kind of kid" for a certain academic subject or extracurricular – negatively impacting their self-worth for a lifetime. This campaign is set to change that way of thinking by bringing awareness to the struggles happening among today's youth, while offering solutions to parents and educators about how to build their self-esteem, especially through STEM-related programs.



FIRST® Robotics Competition FAQ

What is the FIRST® Robotics Competition?

The FIRST® Robotics Competition for Grades 9-12 (ages 14 to 18) is an annual competition that helps young people discover the rewards and excitement of education and careers in science, technology, engineering, and math (STEM). The program challenges high-school-aged students – working with professional mentors – to design and build a robot and compete in high-intensity events that reward the effectiveness of each robot, the power of team strategy and collaboration, and the determination of students.

Why involve a professional mentor?

FIRST creates powerful mentoring relationships between the students and professional mentors. FIRST Robotics Competition teams are often mentored by engineers and other STEM and business professionals. Meaningful involvement of adults in children's lives is proven as an essential component for developing young people's potential.

How is the game played?

Each year's Kickoff event unveils a new, exciting, and challenging game. From the Kickoff, teams have limited time to build and program a robot to compete in the game using a Kit of Parts provided by FIRST and a standard set of rules. CRESCENDOSM presented by Haas is part of the 2024 FIRST IN SHOWSM presented by Qualcomm season. In CRESCENDO, teams are encouraged to see all that is possible when combining their creative ideas and innovations with engineering and design. Through collaboration and communication, our FIRST robotics community around the world will celebrate the role that the arts play in STEAM. Our skills make it possible to create art and experiences that bring us together, entertain us, and move us. Visit www.firstinspires.org/robotics/frc/game-and-season for current season game animation, game manuals, and other materials.

Who participates in the competition?

In 1992, the initial FIRST Robotics Competition took place with 28 teams in a high school gym in New Hampshire. During the 2024 season, nearly 100,000 high-school students on nearly 3,500 FIRST Robotics Competition teams will compete in 98 District Events, 11 District Championships, and 62 Regional Events (in the U.S., Australia, Canada, Israel, Mexico, and Turkey), and the 2024 [FIRST Championship](#) presented by BAE Systems. Teams are comprised of professional mentors and 10 or more student members in grades 9-12. In addition, each FIRST team has one or more sponsors. Those sponsors include companies, universities, or professional organizations that donate their time, talent, funds, equipment, and much more to the team effort.

Is scientific, technology, or mathematic expertise required for students to participate in the *FIRST* Robotics Competition?

No; *FIRST* invites all students to participate. In fact, *FIRST* Robotics Competition is designed to inspire, motivate, and encourage students to learn basic principles while challenging more experienced students. Since there are critical roles for students in everything from design and building, to fundraising and research, to marketing, every student can actively participate and benefit.

What do the students gain from participating?

Throughout their *FIRST* experience, students gain maturity, build self-confidence, learn teamwork, and gain an understanding of professionalism. Students have fun while building a network of friends and professional mentors who enrich their lives.

A series of awards honor accomplishments in areas including engineering, design excellence, competitive play, sportsmanship, and high-impact partnerships between schools, businesses, and communities. A judging committee of distinguished professionals makes award decisions. The most prestigious award is the *FIRST* Impact Award (previously the Chairman's Award), which recognizes the team that best represents a model for other teams to emulate and best embodies the purpose and goals of *FIRST*.

Are there other benefits to participating?

Young people gain the skills and knowledge to fill one of the more than two million STEM-related positions available in the U.S. today. Sponsors benefit by finding future employees and interns. Mentors benefit from renewed inspiration and a reminder as to why they chose a STEM career. Volunteers are recognized as an integral and vital part of the way in which young people connect to the real world, in their own communities and in the world at large.



FIRST® Tech Challenge FAQ

What is FIRST® Tech Challenge?

International FIRST® Tech Challenge teams (up to 15 members, grades 7-12) are challenged to design, build, program, and operate robots to play a themed game in an alliance format.

- Guided by adult coaches and mentors, students develop science, technology, engineering, and math (STEM) skills and practice engineering principles (including keeping an engineering notebook), while realizing the value of hard work, innovation, and sharing ideas.
- The robot kit is reusable from year-to-year and can be programmed using a variety of languages. Teams also must raise funds, design and market their team identity, and do community outreach for which they can win awards.
- Each season culminates with local and regional events where qualifying teams compete for awards and a spot in the international [FIRST Championship](#).

What does every FIRST Tech Challenge team need?

- Two or more adult mentors/coaches who are willing and motivated to coach the team through the build and competition season and beyond.
- Other adults can volunteer to help with administration, fundraising, community outreach, technical advising, and other tasks.
- A suitable meeting place and space to design and build a robot about the size of a microwave oven or approximately 18 by 18 inches.
- A standard kit of robot parts and a common set of game and robot rules issued by FIRST Tech Challenge.
- A budget and a fundraising plan.
- The desire to learn, explore, strategize, build camaraderie, share ideas and talents, make new friends, be accepted, and have fun!

When does FIRST Tech Challenge happen?

- Registration for each season opens in May, and teams generally start to form in August.
- Season game details are announced in early September, which kicks off the design and build season.
- The design and build season runs from September to January.
- Tournament season varies by region and can begin as early as October and continues through April. State and regional tournaments advance teams to the FIRST Championship at the end of April.
- There are also many fun off-season events where teams compete, strategize, hone their skills, learn new technology, and meet other teams.

What is the time commitment?

- **Mentors or adult volunteers** meet with their team at least once per week during the build and competition season (September – April). Many mature teams also meet throughout the school year, and some compete in off-season events or perform community outreach. You can assess your available free time and decide how much time you can devote to the program.
- As a **team member**, the same applies. Students meet at least once per week from mid-September through April. Like any sport or other after-school activity, the more time you invest, the better you will become at your task(s).

Any special skills required?

- **All skill levels are welcomed and needed, technical and non-technical.** Teams need all kinds of skills to succeed, so what are you good at? Chances are we have a job for you. And we'll probably teach you a few new skills while you're with us.
- Student and adult **team members** are encouraged to bring any skills they already have, like programming, electronics, metalworking, graphic design, web creation, public speaking, videography, and many more. *FIRST Tech Challenge welcomes every student with or without specialized skills.*

How is the game played?

Each September, the season's kickoff event unveils a new, exciting, and challenging game to be played on a themed 12'x12' playing field. From the Kickoff, teams have limited time to build and program a robot to compete in the game, typically composed of three sections: autonomous, driver-controlled, and the end game. Teams can use advanced artificial intelligence (AI), augmented reality (AR), and machine learning (ML) technologies to improve the performance of their competition robots during play. Points are added throughout game play, and penalties are assigned at the end of the match.

CENTERSTAGESM presented by RTX is part of the 2024 *FIRST IN SHOW*SM presented by Qualcomm season. Teams will raise the curtain on the power of design, creativity, and precision to create all new experiences. Visit www.firstinspires.org/robotics/ftc/game-and-season for current season game animation, game manuals, and other materials.



What is FIRST® LEGO® League?

FIRST® LEGO® League for Grades PreK-8 (ages 4 to 16; ages vary by country) introduces children to the fun and experience of solving real-world problems by applying science, technology, engineering, and math (STEM). FIRST LEGO League is an international program for children created in a partnership between FIRST and the LEGO Group in 1998. Each year, the program announces an annual Challenge to teams, which engages them in authentic scientific research and hands-on robotics design. After a minimum of eight weeks, the FIRST LEGO League season culminates at high-energy, sports-like tournaments.

What are the FIRST LEGO League Divisions?

- **FIRST® LEGO® League Discover** – For children ages 4-6, this playful introductory STEM program ignites their natural curiosity and build their habits of learning with hands-on activities in the classroom and at home using LEGO® DUPLO® bricks.
- **FIRST® LEGO® League Explore** – Teams of students ages 6-10 focus on the fundamentals of engineering as they explore real-world problems, learn to design and code, and create unique solutions made with LEGO bricks and powered by LEGO® Education SPIKE™ Essential.
- **FIRST® LEGO® League Challenge** – Friendly competition is at the heart of Challenge, as teams of students ages 9-16 (ages may vary by region) engage in research, problem-solving, coding, and engineering – building and programming a LEGO Education SPIKE™ Prime robot that navigates the missions of a robot game. As part of Challenge, teams also participate in a research project to identify and solve a relevant real-world problem.

What is the role of the LEGO Group?

The LEGO Group is the Founding Partner of FIRST LEGO League. Since its inception, the LEGO Group has supported the growth and success of the program by contributing each year to the development, management, and funding of customized Challenge Sets, Robot Sets, marketing communications resources, volunteers, and more. During the 2015-2016 season, LEGO® Education became a FIRST Strategic Partner.

What is the role of FIRST?

FIRST is responsible for providing the overall vision and mission to inspire young people's interest and participation in science and technology. This vision guides all FIRST decisions and led to the development of the FIRST LEGO League program.

The FIRST LEGO League program includes developing the annual Challenge, the standards for the program and Championship Tournaments, and supporting program documents. They also ensure that the FIRST Core Values are upheld in every aspect of the game and Challenge.

Is the *FIRST* LEGO League experience rooted in real-world issues?

Every year, as *FIRST* LEGO League designs the Challenge around the season theme, we look to the real-world practitioners and experts in the chosen subject area for guidance, input, and opinion, so that children are engaged in practical and realistic activities. Every *FIRST* LEGO League Challenge reflects an important real-world issue as a way to not only bring visibility to it among young children, but also as a way to show students how science and technology can contribute to solving problems. The themes are selected to engage students in STEM learning via a topic relevant to their real life. By connecting the experience to real-world issues, we're empowering participants to tackle the world's toughest challenges.

MASTERPIECESM is part of the 2024 *FIRST* IN SHOWSM presented by Qualcomm season. This season, teams will imagine and innovate new ways to create and communicate art across the globe. Visit www.firstinspires.org/robotics/fll/game-and-season for current season missions, details, game manuals, and other materials.

What do the students win?

The competition is judged in four areas: Project; Robot Performance; design and programming of the robot; and Core Values. A judging committee of distinguished professionals makes award decisions. The highest honor, the Champion's Award, goes to the team that is strongest across all four performance categories. At some events, each child may receive a participation medal or other optional team recognition awards.

FIRST LEGO League Discover and Explore offer a non-competitive introduction into the world of science, technology, and innovation. Teams are not judged but are encouraged to present their research findings to family and friends or at a Festival event. Volunteers often organize Festivals where each child may receive a participation medal or other optional team recognition awards.

What is the role of the *FIRST* LEGO League Program Delivery Partners?

FIRST LEGO League relies on volunteers to run the program at many levels, from managing a region to coaching an individual team. *FIRST* and LEGO partner with and manage organizations with similar missions to deliver the program in specified regions. *FIRST* LEGO League Program Delivery Partners roll out the program in their respective regions. These individuals fundraise, run Championship Tournaments, hold workshops and demonstrations, market the program locally, handle public relations, and recruit volunteers and teams.

What other sponsors are involved?

In addition to the LEGO Group role as Founding Partner of *FIRST* LEGO League, the program is supported by Global Sponsors LEGO Education and the LEGO Foundation, and *FIRST* LEGO League Challenge Division Sponsor Rockwell Automation. Also, *FIRST* LEGO League Championship Tournaments are made possible by hundreds of local sponsors, as well as universities/colleges participating in the program.