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What is FIRST®?
FIRST® is a robotics community that prepares young people for the future. FIRST® (For Inspiration and Recognition of Science and Technology) is 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 for grades PreK-8 (ages 4 to 16; ages vary by country). Each program can be facilitated in school or after-school, and students can join at any level.

Who are some of the organizations that sponsor FIRST®?
FIRST® is supported by a strong network of corporations, educational and professional institutions, and individuals. Some of the world’s most respected companies – including more than 200 of the Fortune 500 companies – provide funding, mentorship time and talent, volunteerism, equipment, and to make FIRST® more accessible to students all over the world.

FIRST® Strategic Partners – sponsors that support FIRST® at the highest level – are:

FIRST® Founding Sponsors are:
**FIRST has Strategic Alliances in place with:**
Alpha Omega Epsilon; American Society for Engineering Education (ASEE); Automation Federation/International Society for Automation (AF/ISA); Boys & Girls Clubs of America (BGCA); Electronic Components Industry Association Foundation; Girl Scouts of the USA; MIT Alumni Association; National 4-H Council; National Center for Women & Information Technology (NCWIT); National Fluid Power Association; National Parent Teacher Association (National PTA); National Robotics Week; Sigma Phi Delta Fraternity; Society of Professional Hispanic Engineers; Society of Women Engineers (SWE); Triangle Fraternity; and Yale Science & Engineering Association (YSEA), Society for Information Management (SIM) Foundation.

What does research show about participation in **FIRST**?
Through more than a decade of verifiable data from Brandeis University, including seven years of data from a rigorous longitudinal study, research shows **FIRST** is advancing its mission to increase the number of students interested in STEM – and that interest is influencing their educational and career choices:

- By their 4th year of college, **FIRST** alumni are more likely to be majoring in STEM fields than comparison group peers.
  - 81% of **FIRST** alumni declare a major in STEM compared to 58% in the comparison group.
  - 68% of **FIRST** alumni declare a major in engineering or computer science compared to 29% of the comparison group.

- Young women in **FIRST** have significant gains in all STEM areas including STEM interest, career interest, activity, knowledge, and identity compared to their non-participating peers.
  - 69% of female **FIRST** alumni declare majors in STEM by their fourth year in college compared to 49% of the comparison group.
  - 51% declare a major in computer science or engineering by their second year of college compared to 16% of the comparison group of women.
  - Female **FIRST** alumni are 2.6 times more likely to take an engineering course and 3.4 times more likely to take a computer science course in their fourth year of college than women who didn’t participate in **FIRST**.

Compared to their peers, **FIRST** students are:
- 2.2 times more likely to show gains in STEM interest
- 2.1 times more likely to show gains in STEM knowledge
- 3.2 times more likely to show gains in STEM activity
- 1.9 times more likely to show gains in STEM career interest
- 1.4 times more likely to show gains in STEM identity

Source: **FIRST** Longitudinal Study: Findings at 84-Month Follow-Up, Brandeis University, March, 2021.
Learn more at [www.firstinspires.org/impact](http://www.firstinspires.org/impact).

Who participates in **FIRST** programs?
More than 2.5 million young people from more than 100 countries have participated in **FIRST** programs since our organization was founded in 1989. Over the past 30+ years, **FIRST** has grown from a single high-school program (**FIRST** Robotics Competition) to offering a full progression of programs for students ages 4-18 globally. Through **FIRST**, students from all
walks of life develop self-confidence in STEM and valuable, real-world skills that open pathways to all career choices and outcomes.
For the latest global statistics, please visit firstinspires.org/about/at-a-glance.

Who manages the teams and events?
FIRST is truly a volunteer-driven organization. In a single season, nearly 140,000 volunteer roles are 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 FIRST are:
• Attend a FIRST event: Visit the FIRST event search to find a free event close to you;
• Contact a mentor from a local team to assist or create a mentor profile on the FIRST Mentor Network
• Visit the FIRST volunteer webpage for volunteer/event opportunities; or
• Contact FIRST at 1-800-871-8326 or email volunteer@firstinspires.org.
Interested volunteers can visit our website at www.firstinspires.org/ways-to-help/volunteer for more information about how to become a mentor, coach, or event volunteer.

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.” – Dr. Woodie Flowers

What is Coopertition®?
Coopertition® produces innovation. At FIRST, Coopertition is displaying unqualified kindness and respect in the face of fierce competition. Coopertition is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete. Coopertition involves learning from teammates. It is teaching teammates. It is learning from mentors. And it is managing and being managed. Coopertition means competing always but assisting and enabling others when you can.

Who are FIRST Alumni?
FIRST alumni are high school graduates who participated in high school-level FIRST Tech Challenge and/or FIRST Robotics Competition. FIRST alumni stand out to potential employers. They are innovative, leaders, and ready to hire. They have gone on to specialize in engineering, science, education, media, mathematics, theater, film, marketing, business, finance, health, art, communications, medicine, ecommerce, politics, technology, and much more.
FIRST helps alumni of FIRST programs take the next step, reach for the next breakthrough, and take their dream and see it through. No matter their dream, FIRST helps them get there. FIRST Alumni have access to networking opportunities, internships and jobs, community, inspiration, and more through FIRST.

Learn more at www.firstinspires.org.alumni
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, engineering, and technology. 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. In 1992, the initial FIRST Robotics Competition took place with 28 teams in a high school gym in New Hampshire. In 2022, the season included more than 3,225 teams from 26 countries competing in 90 District Events, 58 Regional Events, and 11 District Championships, as well as the FIRST Championship.

Why involve a professional mentor?
FIRST creates powerful mentoring relationships between the students and professional mentors. FIRST Robotics Competition teams include engineers and other professionals from some of the world’s most respected companies. Mentors create authentic and relevant learning opportunities, bringing out individual pride, empowerment, and a sense of belonging that young people need in their lives.

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. Learn more about the current season game at www.firstinspires.org/robotics/frc/game-and-season.

Who participates in the competition?
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?
FIRST invites students who may not be predisposed to science, math, or technology 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. Whether it’s finding their people or finding their path, students gain the skills and confidence to forge ahead and build their future with *FIRST*.

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 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 science, technology, engineering, and math (STEM) as a 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.
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 floor 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 brand, 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 forms generally start to form.
- 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 events 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, your family, and your available free time can decide together 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 ones 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. Learn more about the current season game at [www.firstinspires.org/robotics/ftc/game-and-season](http://www.firstinspires.org/robotics/ftc/game-and-season).
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 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 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 robots.
FIRST® LEGO® League: Challenge – Friendly competition is at the heart of Challenge, as teams of students 9-16* engage in research, problem-solving, coding, and engineering – building and programming a LEGO robot that navigates the missions of a robot game. As part of Challenge, teams also participate in an innovation project to identify and solve a relevant real-world problem.

What is the LEGO Group's role?
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.

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 teams who exhibit outstanding solutions to the season’s Innovation Project are nominated to advance to the annual FIRST LEGO League Global Innovation Award where 20 selected teams attend workshops with industry leaders, and showcase their research, inventions, and process to judges, sponsors, peers and a global audience. One team wins the FIRST LEGO League Global Innovation Award and experiential prizes.

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 raise funds, 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’s role as Founding Sponsor of FIRST LEGO League, the program is supported by Global Sponsors, Amazon Future Engineer, 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.