

FRC

FIRST[®] Robotics Competition



FIRST[®] Robotics Competition: **HOW IT WORKS**

2016 SEASON FACTS (PROJECTED)

75,000+ high-school-aged young people

3,100+ teams

30,000+ Mentors and Adult Supporters

19,000+ other Volunteers

More than 3,000 sponsoring companies

Kit of Parts for all teams

6-week build season

53 Regional Events

8 State/District Championships

63 District Events

1 Championship
Edward Jones Dome
St. Louis, MO
April 27-30, 2016

Hardest Fun Ever

The FIRST[®] Robotics Competition combines the excitement of sport with science and technology to create a unique varsity Sport for the Mind™. The program helps high-school-aged young people discover the rewarding and engaging world of innovation and engineering.

Inputs:

- Teams of 10 or more high-school-aged young people
- Professional engineers, Mentors
- Teachers, parents, community
- Corporate sponsors
- New game challenge each year

Outputs:

- Real-world engineering experience
- Technological literacy
- Experience with LabVIEW[®] graphical design software from NI, a tool used by professional engineers
- Inspired minds
- Teamwork skills
- Career path

Get started:

You'll need...

- At least 10 students, grades 9-12
- Volunteers, including 2-3 professional engineers and 2-3 additional adults
- Financial Sponsors
- A meeting place
- Tools
- Time



"...It's like life. You never have enough information. You never have enough time. The kit of materials may be what you have in the warehouse. There are always people doing competing things and you must have a strategy. We've created a microcosm of the real engineering experience."

Woodie Flowers
FIRST Distinguished Advisor



FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY **FIRST**

WWW.USFIRST.ORG

FRC

FIRST® Robotics Competition



FIRST® Robotics Competition: **OVERVIEW**

Since 1989, the *FIRST* Robotics Competition has grown from 28 teams to over 3,100 projected for 2016.

Over 90% of the high schools and their company Mentors have stayed involved year after year.

What is it?

- A unique varsity Sport for the Mind™ designed to help high-school-aged young people discover how interesting and rewarding the lives of engineers and scientists can be.

Why is it unique?

- It is a sport where participants play with and learn from the pros
- Designing and building a robot is a fascinating real-world professional experience
- Competing brings participants as much excitement and adrenaline rush as conventional varsity tournaments
- The game rules are a surprise every year

How it works

The *FIRST*® Robotics Competition stages short games played by robots. The robots are designed and built in six weeks (from a common kit of parts) by a team of high-school-aged young people and a handful of engineers-Mentors. The students program and remotely control the robots in competition rounds on the field.

Teams are formed in the fall. The annual *FIRST* Robotics Competition Kickoff in early January starts the six-week "build" season. Competitions take place in March and April. The *FIRST* Robotics Competition Regional events are typically held in university arenas. They involve 40 to 70 teams cheered by thousands of fans over three days (two days for District events). A championship event caps the season. Referees oversee the competition. Judges evaluate teams

and present awards for design, technology, sportsmanship, and commitment to *FIRST*®. The Chairman's Award is the highest honor at *FIRST* and recognizes a team that exemplifies the values of *FIRST*.

FIRST Robotics Competition participants, as well as participants in *FIRST* K-12 robotics programs, use LabVIEW® graphical design software from NI, a tool used by professional engineers.

What is needed to start a team:

- 2-3 engineers or other professional Volunteers encouraged by their company's management
- 10 or more high-school-aged young people led by a teacher, ideally supported by the school principal and a group of parent Volunteers
- Funding (of \$15,000 to \$30,000) to participate in 2 to 3 Regional competitions provided by a single, company, a group of companies, and/or through school fund-raising efforts

What is needed to host a *FIRST* Robotics Regional Competition:

- Funding (\$150,000 to \$200,000) raised from corporations, foundations, individuals, and administrations
- Volunteers to organize, raise funds, recruit new teams and support the competition itself (judges, referees, announcers, security, etc.)



FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY **FIRST**



Benefits of sponsorship

FIRST sponsorship:

- Builds a technologically literate work force
- Provides renewed inspiration to company engineers and employees
- Provides rich employee volunteer opportunities
- Strengthens company reputation in the community
- Provides employee team building and training opportunities and increases positive feelings for employers

Become a Sponsor

- Provide financial support
- Engage employees as Mentors and/or Volunteers
- Provide equipment and facilities
- Offer scholarships
- Provide internships
- Enjoy recognition and hospitality benefits

Mentor a team

Engineers and other employees serve as advisors and role models, showing students how math, science, and technology are used to solve problems in the real world. They employ and teach their own project management and idea creation skills, demonstrating teamwork, learning from failures, and celebrating success.

Volunteer at events

FIRST events are great opportunities for widespread employee involvement and volunteerism.

What has been accomplished to date:

- Since 1989, the *FIRST* Robotics Competition has grown from 28 teams to over 3,100 projected for 2016
- More than 93% of the teams stay involved year after year
- A proven positive impact on student interest in engineering
- Participants learn the great values of teamwork, self-starting, character, time management, etc.
- In most schools, participation in the *FIRST* Robotics Competition has had a broad positive impact beyond the team itself. The *FIRST* Robotics Competition is included as a varsity sport in yearbooks
- Volunteers return to participate year after year
- *FIRST* has received major media coverage of events and the impact of the *FIRST* Robotics Competition

Hope for the future

We know the FIRST Robotics Competition will have succeeded when:

- More than half of high schools are funding their *FIRST* teams as varsity activities
- More than 12,000 corporations are volunteering engineers-Mentors for these teams year after year
- *FIRST* Robotics Competition events are as common as any other high-school sports event
- The *FIRST* Robotics Competition season is televised
- The *FIRST* Volunteer organization is recognized and admired worldwide

Get Involved!

Join or start a team in your area



Sponsor a team, event, or local *FIRST* program



Become a team Mentor or Coach



Volunteer to fill over 100 roles

For information about *FIRST*® in your area:

WWW.USFIRST.ORG/CONTACTUS
603-666-3906



FIRST® Robotics Competition

FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY

200 Bedford Street ■ *Manchester, NH 03101* ■ *USA*

WWW.USFIRST.ORG

FIRST® the *FIRST*® logo, *FIRST*® Robotics Competition, FRC®, and Sport for the Mind™ are trademarks of the United States Foundation for Inspiration and Recognition of Science and Technology (*FIRST*). LabVIEW® is a trademark of National Instruments. © 2015 *FIRST*. All rights reserved.