Helping Grow Talent Locally

FIRST Washington's
Progression of Programs
2019-2020

FIRST LEGO LEAGUE JR.

FIRST LEGO LEAGUE

FIRST TECH CHALLENGE

FIRST ROBOTICS COMPETITION

Video Link:

https://www.youtube.com/watch?v=GpGhBV8SyGw&t=100s

FIRST® Washington is…

…the No. 1 youth-serving non-profit in Washington State advancing STEM education outcomes and the development of 21st century skills.

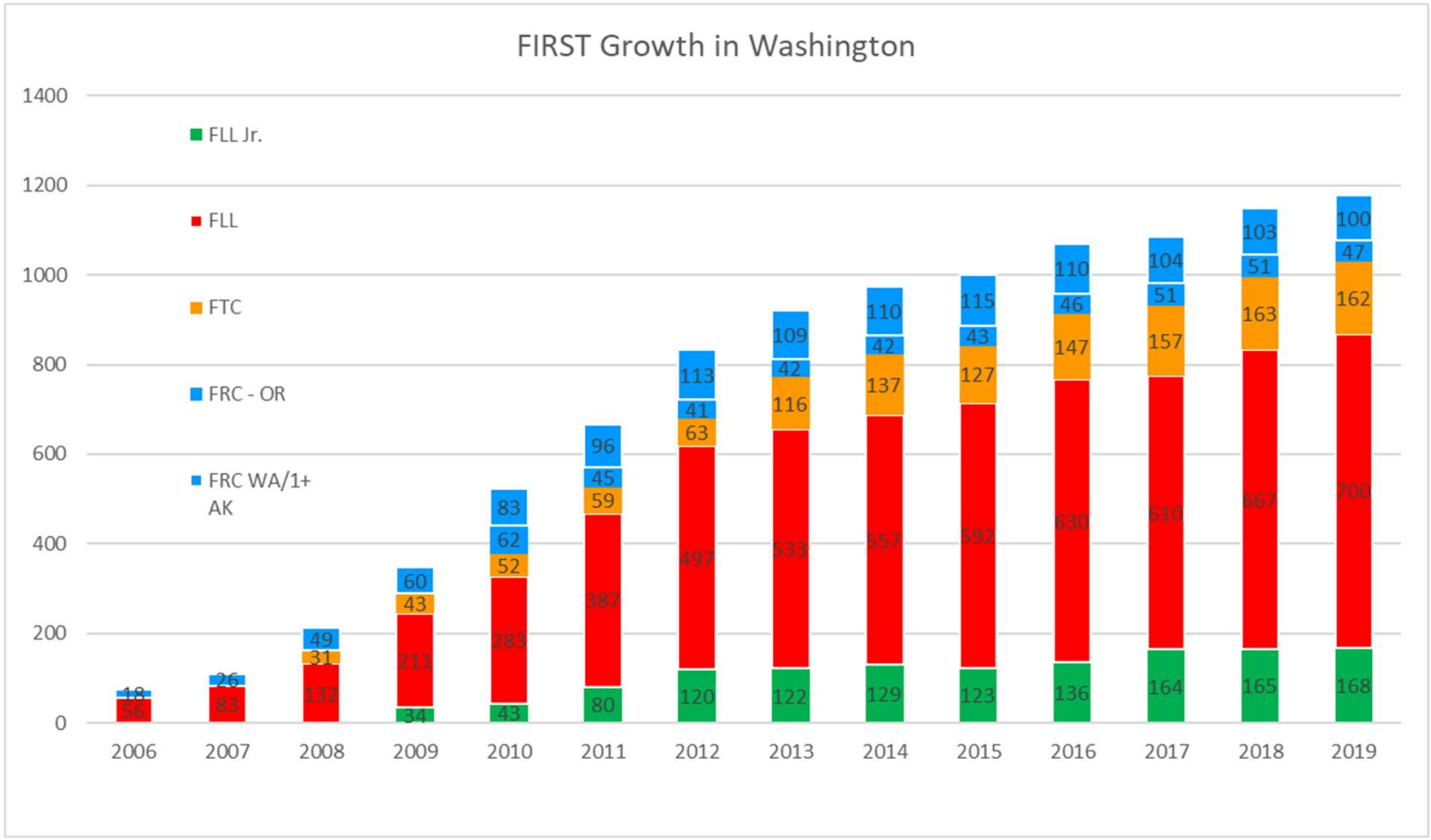
FIRST LEGO LEAGUE JR.

FIRST LEGO LEAGUE

FIRST TECH CHALLENGE

FIRST ROBOTICS COMPETITION

Incredibly Popular with Kids!



FIRST Washington is 1,177 teams…

…growing our state reach both in class and afterschool.

2019-2020 **Numbers at a Glance**

15,828 students in **135 school districts and 35 counties**

5,500
Mentor/coach roles for teams and competition volunteer roles

558K+
volunteer hours serving Washington State youth

~$80M
scholarship opportunities nationally from nearly **200 providers**

125
Competitions & events annually

40
FIRST Washington teams compete annually at *FIRST* Championships

FIRST Washington's Vision

Bring ***FIRST*** Programs to every community and school in Washington State.

FIRST Washington's Strategic Plan to serve students and the community

- **Mission:** FIRST Washington inspires all young people to be science and technology leaders by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership
- **Vision:** For every school across Washington to have a *FIRST* team
  FIRST's short-term vision is to serve 22,000 youth by 2022, to train another 300 elementary and middle school teachers in underserved areas across the state, and to equip 300 underserved classrooms with equipment to succeed.

Strategic Initiatives

Expand Participation	Increase Diversity	Scale Efficiently	Ensure Sustainability	Achieve Broad Recognition
Help K-12 school teachers gain the skills and confidence to teach students STEM/CS through the combination of: • Professional Development • Free and customizable OSPI- approved curriculum • Increase number of school based and community based teams	Foster a community that embraces the philosophy of "Exposure is Everything". Bringing FIRST programs to: • Rural and non-traditional background communities • Encourage teams to be reflective of their community • Facilitate Diversity, Equity and Inclusion workshops	Reach more students via strategic partnership and self-serve models: • Strengthening FIRST Washington's 10 regions through work with the 9 ESD's, local school districts, Washington STEM and industry. • Increase mentor opportunities for industry	• Raise the financial resources through private and public entities • Recruit and steward adults and FIRST alumni as coaches/mentors and event volunteers • Train adult volunteers across FIRST Washington regions to run competitions and events	Enhance marketing efforts to build case for support in growing/sustaining FIRST programs in diverse communities by: • Increase advocacy work in Olympia for funding and classroom hours dedicated to STEM/CS • Bring additional funding and mentor resources to rural teams

FIRST Progression of Programs

Ages 6-10

Teams of up to 6 young children build interest in science with a real-world challenge solved by guided research and imagination.

Ages 9-14

Teams of up to 10 children build LEGO®-based robots and develop research projects based on a real-world scientific challenge.

Ages 12-18

Teams of up to 15 students develop strategy, design and build sophisticated robots using a modular kit-of-parts, then compete head to head.

Ages 14-18

Teams of ~25 students compete in this "Varsity *Sport for the Mind,*™" combining the excitement of sports with the rigors of science and technology.

2019-2020 Season Themes

BOOMTOWN BUILD

CITY SHAPER

SKYSTONE PRESENTED BY Qualcomm

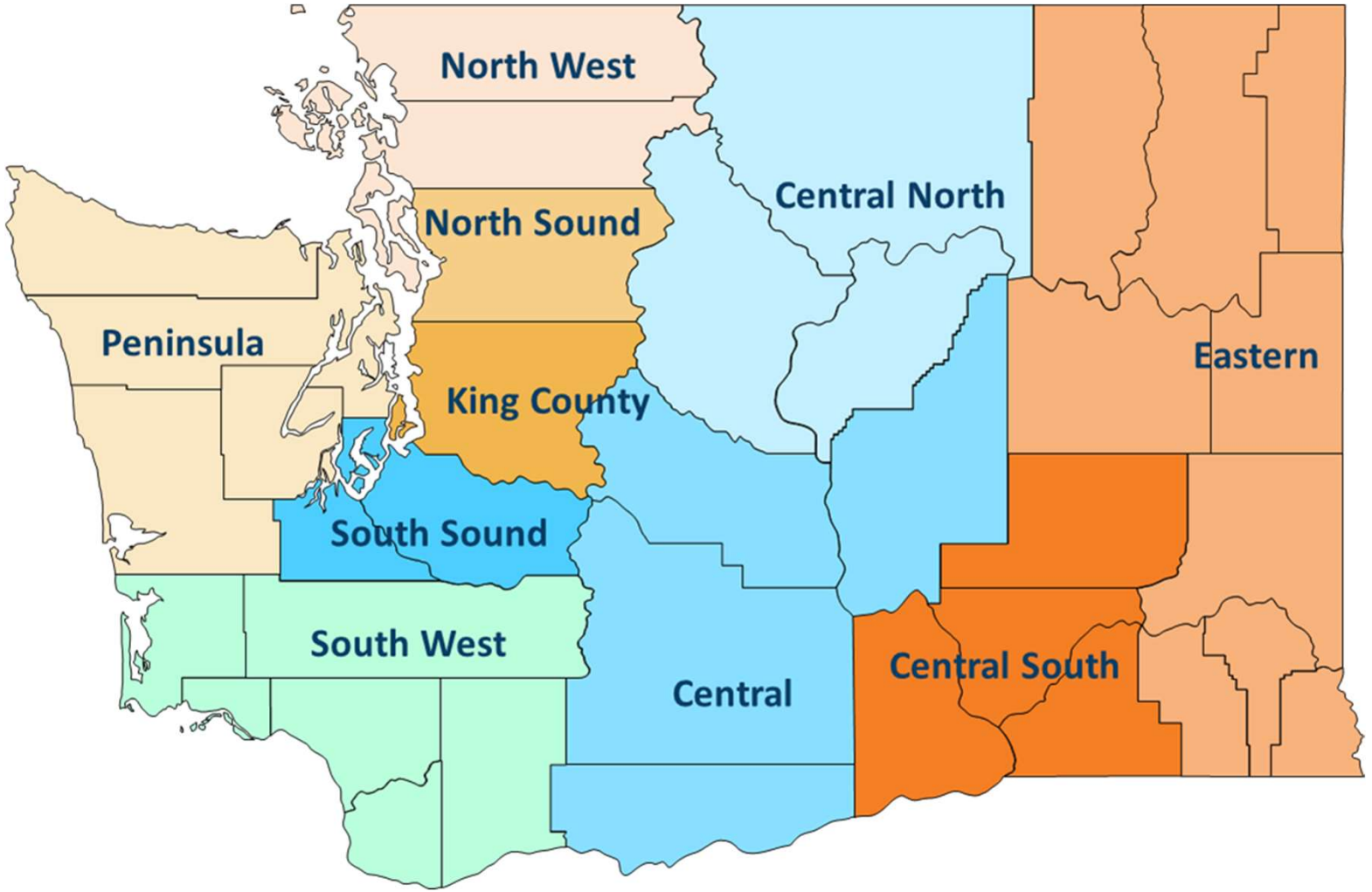
INFINITE RECHARGE

FIRST

FIRST is…building the pipeline for our communities economies

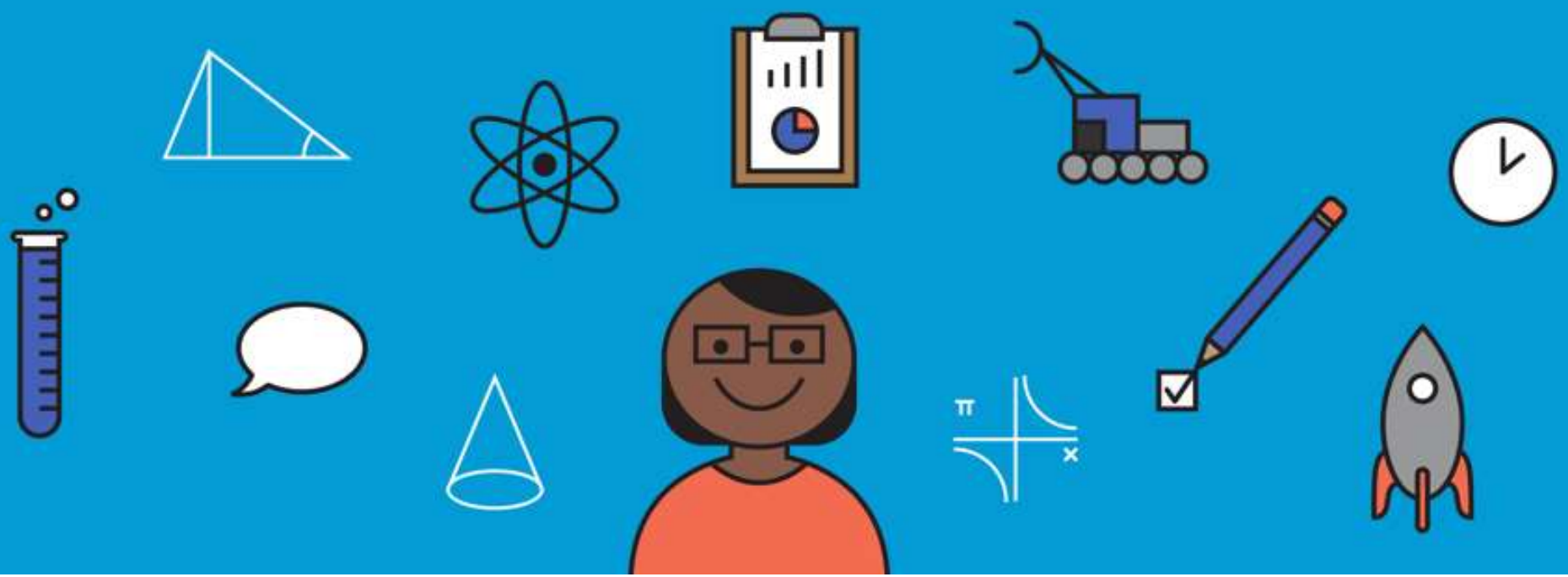
- Local employers want local talent to hire
  - *FIRST* teams are local, pooling talent from educators and industry.
  - Career Connected/Project Based learning for every kid across every community.
  - Foundational commitment to equity and access
- *More Than Robots*SM
  - Equipping students with real-world skills, including digital literacy, teamwork, leadership, creative problem solving, and time/project management
  - Helping students channel their curiosity, think critically, and seek ways to improve the world around them

FIRST Washington Regions almost align with 9 ESD's



FIRST®

THE IMPACT

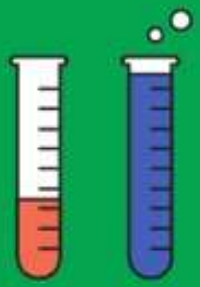


Substantial Increase in STEM
INTEREST

***FIRST*® participants are**
SIGNIFICANTLY MORE LIKELY to show gains in interest in:

- ☑ STEM
- ☑ STEM CAREERS
- ☑ UNDERSTANDING OF STEM

(than a matched comparison group of students)

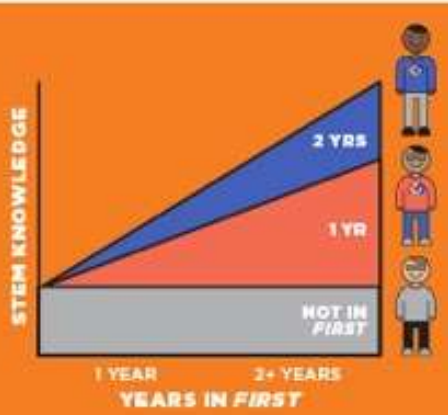


THEY ARE OVER 2X

as likely to show gains in their interest of STEM

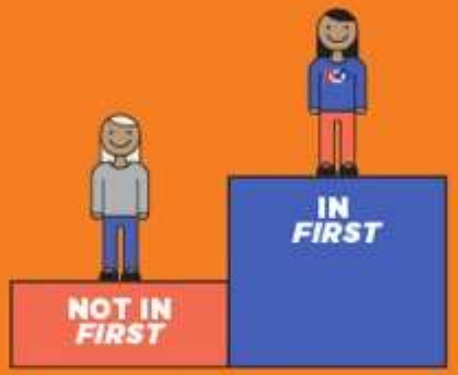
(than a matched comparison group of students)

Substantial Increase in STEM
UNDERSTANDING



STEM KNOWLEDGE CONTINUES TO GROW THE LONGER YOU STAY

Students who persist in *FIRST* for more than one year show significantly greater gains than those who left after a single year.



THE IMPACT ON GIRLS IS SIGNIFICANT

Females in *FIRST* have a dramatically increased understanding of STEM compared to females in the comparison group.

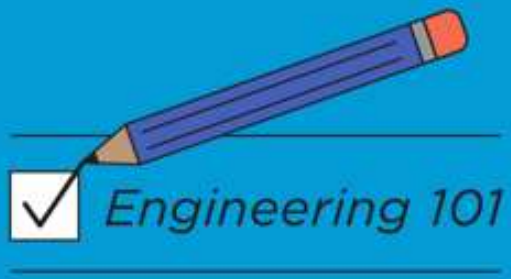
FIRST Alumni Are Ready for a STEM CAREER

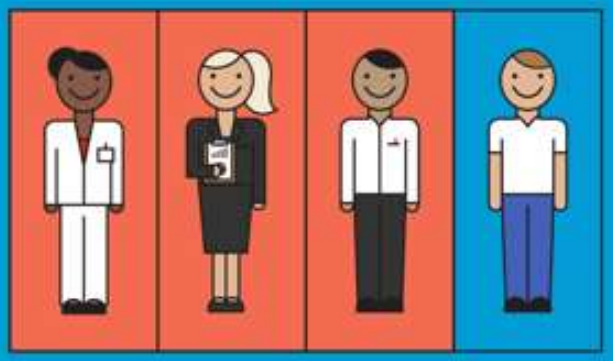
***FIRST* ALUMNI ARE**

2.6x

more likely to enroll in an ENGINEERING course their freshman year

(than a matched comparison group of students)





OVER 75%

of *FIRST* Alumni are in a STEM FIELD AS A STUDENT OR PROFESSIONAL

GAINS IN WORKFORCE SKILLS:

COMMUNICATION
76% of students reported gains

CONFLICT RESOLUTION
93% of students reported gains

TIME MANAGEMENT
95% of students reported gains

PROBLEM-SOLVING
98% of students reported gains

2019-2020 *FIRST* Progression of Programs

BOOMTOWN BUILD

FIRST **LEGO League Jr.**

CITY SHAPER

FIRST **LEGO League**

SKYSTONE
PRESENTED BY Qualcomm

FIRST **Tech Challenge**

INFINITE RECHARGE

FIRST **Robotics Competition**

FIRST LEGO LEAGUE JR.

Ages 6-10 (Grades K-4)

Teams of up to 6 kids build interest in science with a real-world scientific challenge solved by guided research and imagination. Program offered afterschool (Expo) and in-classroom (non competitive).

BOOMTOWN BUILD

2019-2020 Season

- Introduction to science and technology
- Build a Challenge-related model that moves using LEGO® Education WeDo 2.0 technology
- Create a *Show Me* poster and practice presentation skills
- Explore challenges facing today's scientists
- Discover real-world math and science
- Engage in team activities guided by *FIRST* Core Values

FIRST LEGO LEAGUE

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

Teams of up to 10 kids build LEGO®– based robots and develop research projects based on real-world scientific challenges. Program offered afterschool (competitive) and in-classroom (non competitive).

CITY SHAPER

2019-2020 Season

FIRST LEGO LEAGUE

- Create innovative solutions to challenges facing today's scientists
- Strategize, design, build, program and test an autonomous robot using Challenge-related model using LEGO® MINDSTORMS® technology
- Apply real-world math and science concepts
- Develop career and life skills
- Become involved in their local and global community

FIRST TECH CHALLENGE

Ages 12-18 (Grades 7-12)

Teams of 15 (avg. 10) students develop strategy, design and build sophisticated robots using a modular kit-of-parts, then compete head to head. Program offered afterschool (competitive) and in-classroom (non competitive).

SKYSTONE

PRESENTED BY Qualcomm

2019-2020 Season

- Head-to-head competition using a sports model
- Teams design, build, and program robots based on sound engineering principles
- Reusable platform, powered by Android technology, programmed using java or Blockly
- Develop strategic problem-solving, organization, team-building skills
- Awards for competition, community outreach, design
- Qualify for >$80 million in scholarships

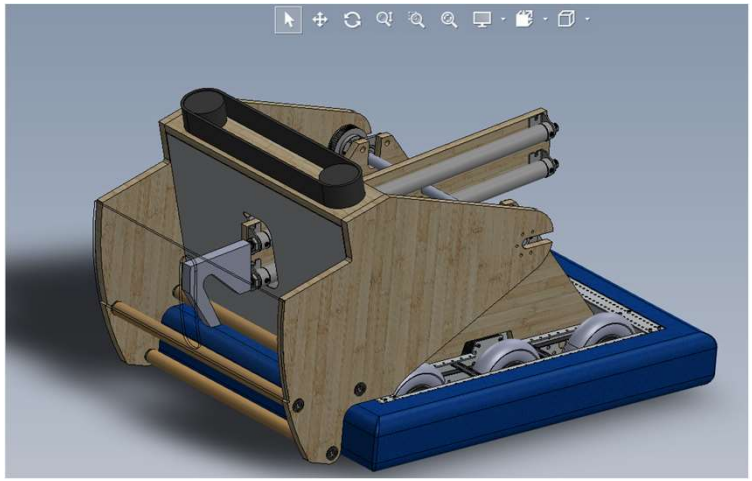
Video Link:

https://www.youtube.com/watch?v=cJyrqmgfNZ4

FIRST ROBOTICS COMPETITION

Ages 14-18 (Grades 9-12)

Teams of 28 (average) or more students compete with 120-pound robots in this Varsity *Sport for the Mind*,™ combining the excitement of sports with the rigors of science and technology.



FIRST POWER UP

2018 Season

FIRST ROBOTICS COMPETITION

- Strict rules, limited resources, time limits
- Students mentored by professional engineers
- Learn and use sophisticated hardware and software
- Build and compete with robots of their own design
- Develop design, project management, programming, teamwork, strategic thinking, and *Coopertition*® skills
- Qualify for >$80 million in scholarships

Who is *FIRST*® For?

- For students (grades K-12, ages 6-18):
  the hardest fun you'll ever have
- For mentors, coaches, and volunteers:
  the most rewarding adventure you'll ever undertake
- For sponsors/donors:
  the most enlightened investment you could ever make

Industry Volunteers

Volunteer share their professional skills:

- Programming and coding
- Building
- Project/time management
- Community outreach
- Budgeting and forecasting
- Presentation coaching
- Marketing, communication, public relations, social media
- etc.

Help Build Our State's Workforce Pipeline

- *FIRST* is a perfect private/public partnership
- Call/email – ask how you can bring *FIRST* programs to your school/community

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