2022 Prior Lake Robotics Middle School Program
sponsored by
FIRST FRC Team 2169, KING TeC

FIRST Robotics

- Founded by Dean Kamen in 1989, short for “For Inspiration and Recognition of Science and Technology”
- FIRST is the world’s leading youth-serving non-profit for advancing STEM education.
- The purpose of FIRST- To inspire youngsters in STEM
- Over 530K students in 95+ countries – 61K teams

Grades 9-12 **Grades 7-12** **Grades 4-8** **Grades K-3**



FIRST Impact

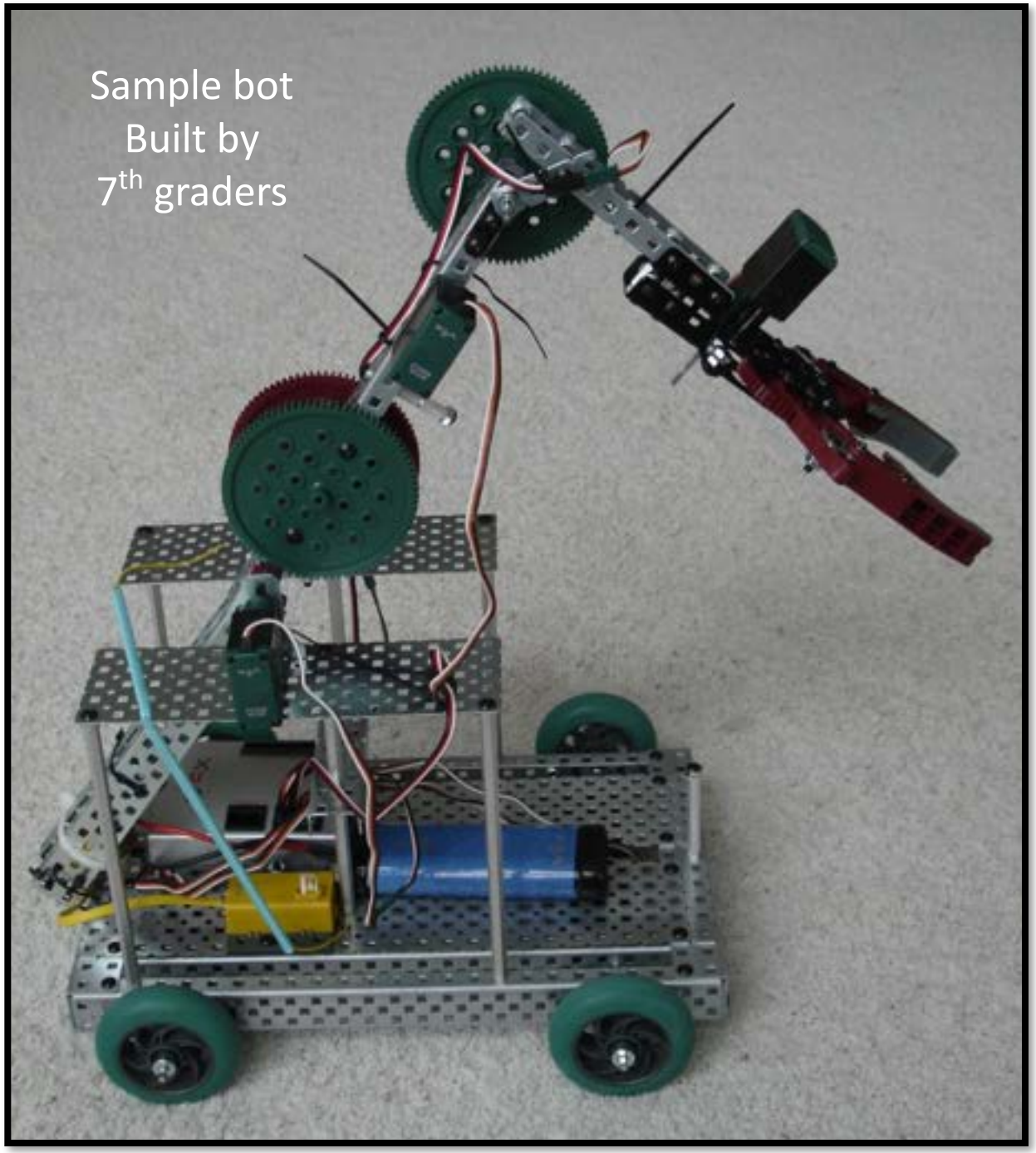
- FIRST participants are 2X more likely to show interest in STEM careers.
- 87% of participants plan to take on more challenging Math/Science course.
- There is a substantial gain in STEM knowledge among FIRST kids who stay beyond the 1st year.
- Significant impact on girls' in increased understanding of STEM (double, compared to those who are not in FIRST).
- FIRST Alumni are 2.6X more likely to enroll in engineering.

Impact on non-STEM related activities

- 76% reported gain in communication
- 93% reported gains in conflict resolution
- 95% reported gains in time management
- 98% reported gains in problem solving

Prior Lake Robotics

Founded in 2006 we have grown from 1 team and 21 kids to over 50 teams and 350 kids participating in 2019, across all forms of robotics activities offered. Pandemic kept us away from running the elementary and middle school programs in 2020. We resumed with a good response in 2021.



Welcome to Middle School Robotics

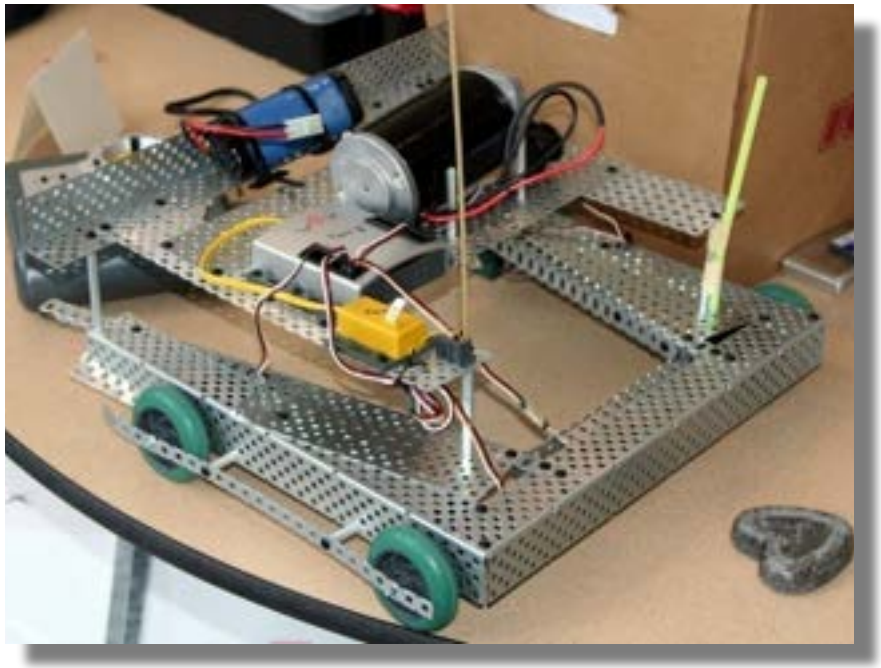
brought to you by

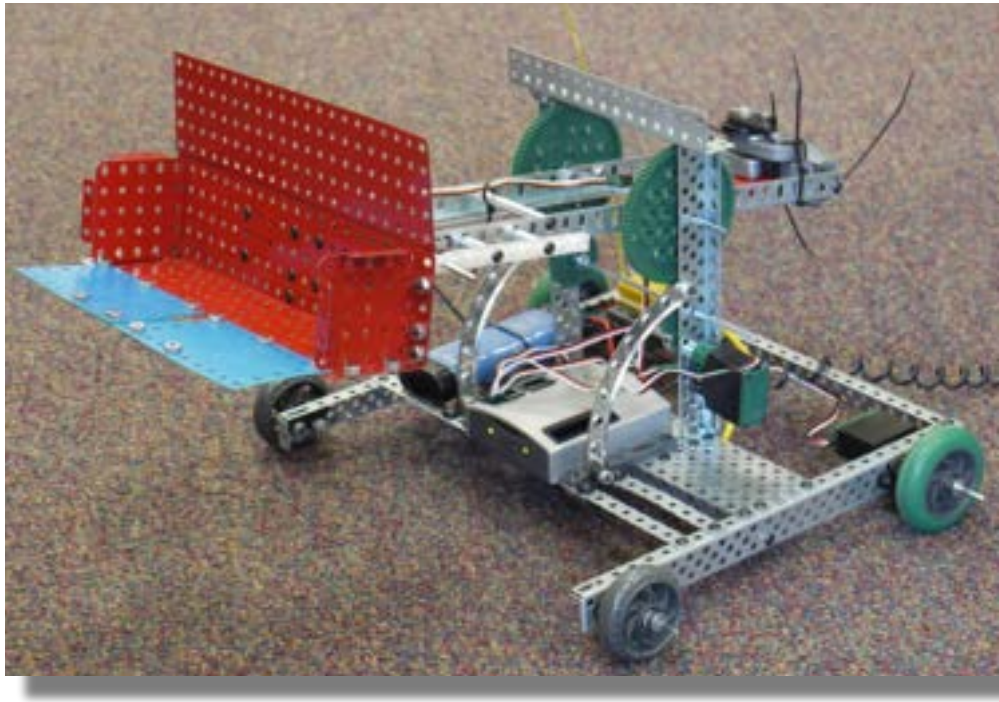
Prior Lake Robotics
&
FIRST Team 2169
KING TeC

The basic kit of parts.

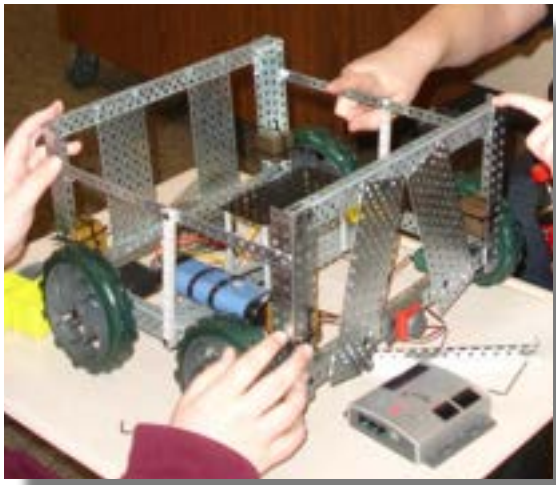
One basic kit,
but different
designs for
different tasks.

Each year the game changes and so do the robots.





Start with building on a solid frame base (called the square bot), and then add the structural components, followed with programming. Follow the rules in the manual to avoid penalties. You will have help.

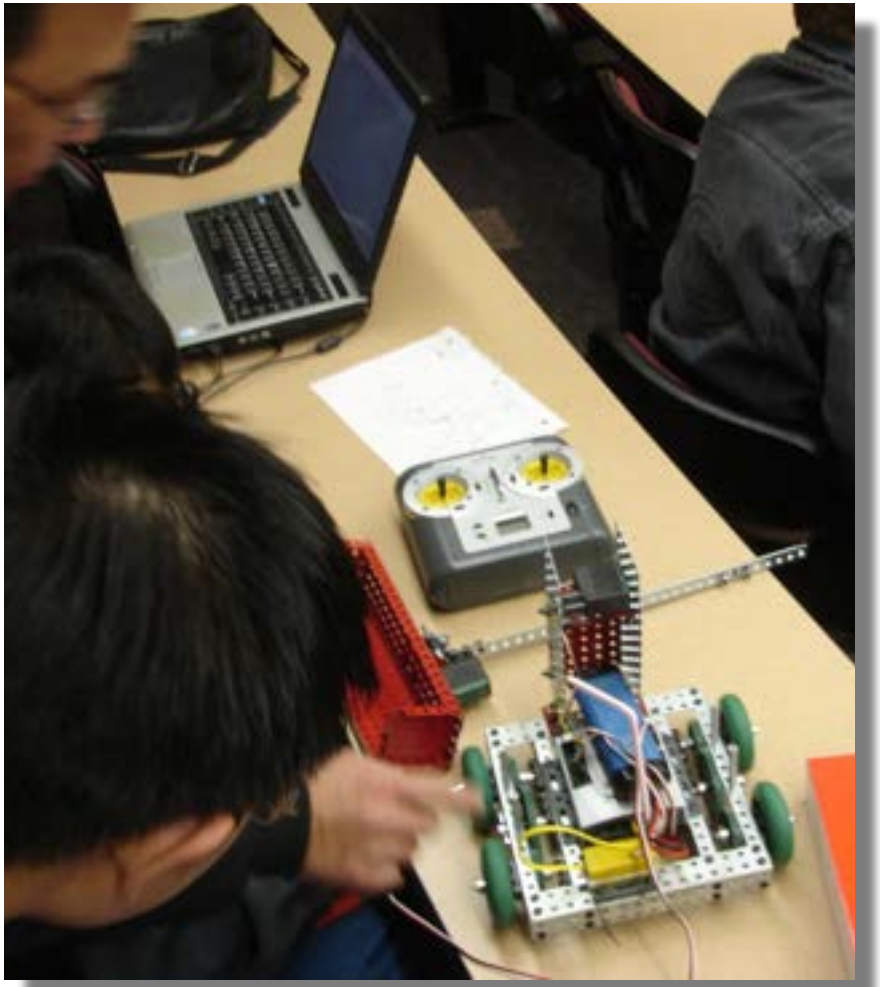


Schedule for KTC 2022 Season:

- Thursday September 08th, 6:00-7:00 pm - Team formation night and kit/laptop hand out.
- From Tuesday, Sep 13th to Thursday, Dec 15th, 7:00-8:30pm (Open to shift it ahead by 30 minutes)
  - Schedule would be updated on the website calendar by next week. Teams are requested to refer to that for any changes.
  - Over Oct and Dec, teams meet Tue and Thu every week from 7-8.30pm.
  - In Nov, meets mostly happen only on Tuesdays due to school conferences and holidays.
  - Work nights with parts cart and mentorship for build and programming help.
  - Starting mid-Nov, the field would be setup for practice runs.
- Saturday Dec 17th, 9:00am-5:00pm

  Inhouse Tournament (KingTec run the event) in PLHS Gym

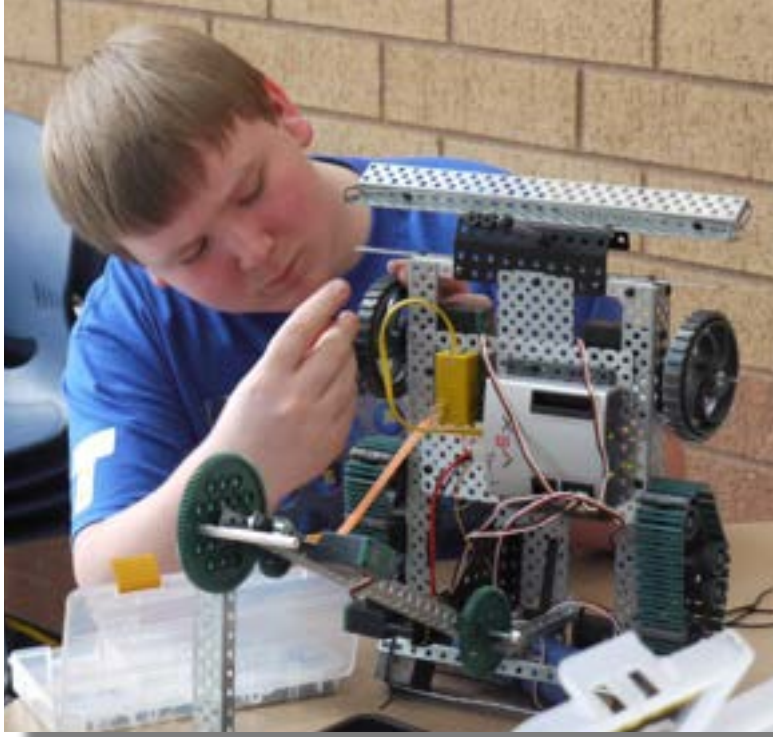
Practice driving,
improve the program and
refine the robot.

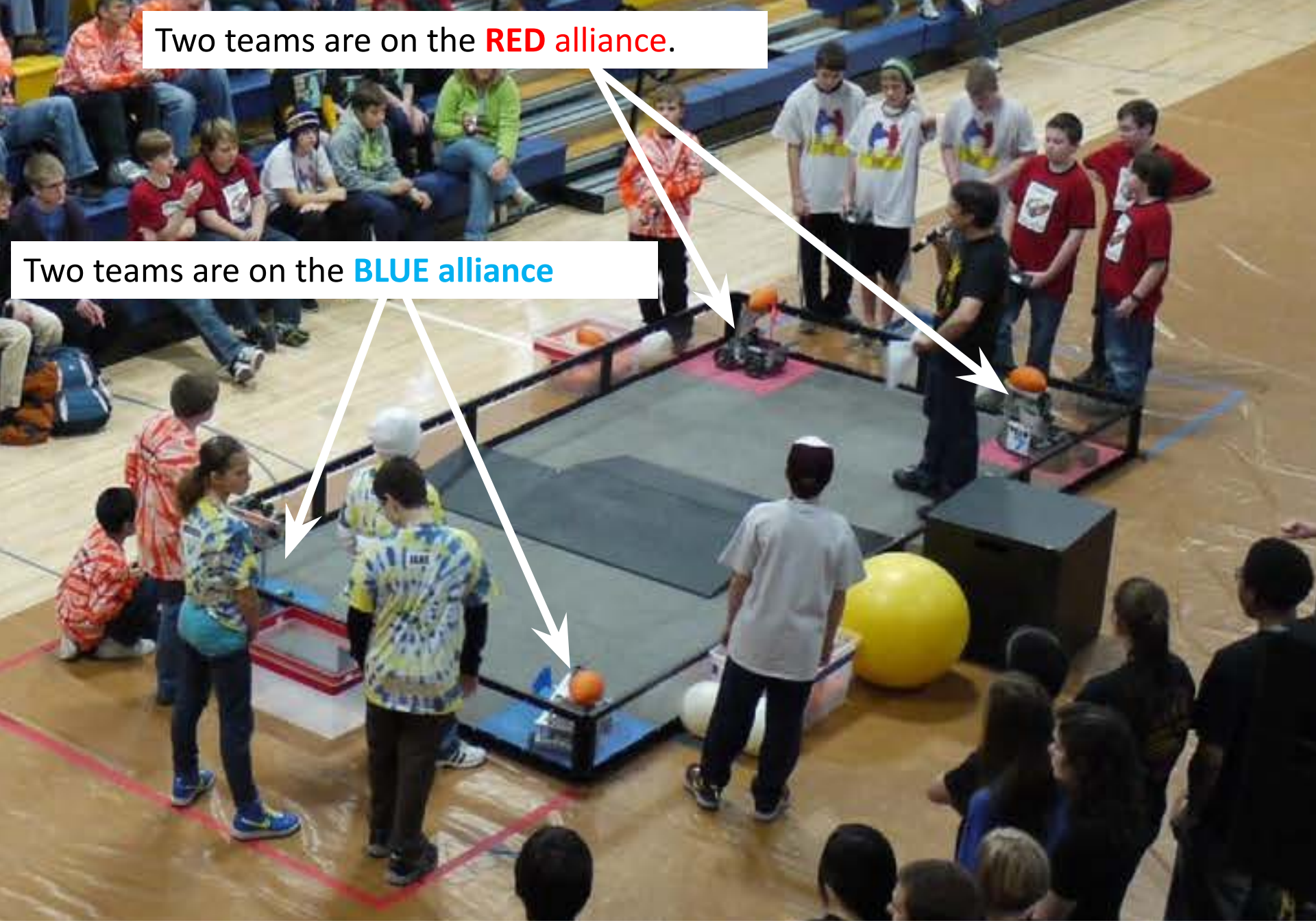


Time for the competition!

Hosted by KING TeC at PLHS.

Last minute details are worked on, from nuts and bolts to stronger programming.




Two teams are on the RED alliance.
Two teams are on the BLUE alliance

Ready?, Set,...PLAY!!

It's a lot of fun, but it's only just the beginning!

GRADE K 1 2 3 4 5 6 7 8 9 10 11 12

Jr.FLL Junior FIRST® LEGO® League

FLL FIRST® LEGO® League

KTC

FTC FIRST® Tech Challenge

FRC FIRST® Robotics Competition

"Prior Lake Robotics"
Help needed at all levels

Middle school robotics is the stepping stone to the larger robots offered at the high school.

The Next Step…

The *FTC* Kit-of-Parts.

FTC

FIRST Tech Challenge

Just like VEX, each year the FTC *challenge* changes.

The state tournament in the recent years was held at PLHS hosted by KING TeC. Winners of this event advance on to the Super regional in Iowa.

2010 *FIRST* Robotics World Competition
in the
Georgia Dome, Atlanta.
The Prior Lake FTC team, *Tempered Steel* and their alliance partners, brought home a
2nd Place World Championship trophy.
In 2021, the team won the Industrial Design award

PLHS students

3855- *Tempered Steel* 154- *Renegade* 2859- *Team Tiki*

The final step….

FRC

FIRST Robotics Competition

(MSHSL sponsored competition)

The FRC Kit-of-Parts changes every year, though many of the pieces have similar components from the previous years.

The FRC robot is much larger, weights 120 pounds and is built in six weeks. 2021 bot *Sir Morrien* below.

Robots competed in the Georgia Dome and the Pits Area is in the World Congress Center.

"…Where young people dream of becoming science and technology leaders."

Dean Kamen, Founder

Gracious Professionalism



- Gracious Professionalism is a key value we hold ourselves accountable to here.
- 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.
- They stay away from mistreating others in anyway.
- No chest thumping tough talk, but no sticky-sweet platitudes either.
- Knowledge, competition, and empathy are comfortably blended.

Dr. Woody Flowers
ME Prof. at MIT

FIRST

Expectations at KTC



- Gracious Professionalism at all times!
- *Student responsibilities*
  - Design and build robot
  - Maintain an engineering notebook – bring it to each session and keep it updated.
  - Work as a group
- *Parents are responsible* only to monitor the team progress, **not lend a hand**.
- *Mentors responsible for*
  - Guide the process
  - Ask open ended questions
  - Help students see options, but let them choose

FIRST

Email: vidyaguhan.plsas@gmail.com

(Also available on the registration form.)