

What's **FIRST**®?

Igniting young minds.

Teaching life skills.

Nurturing passions for science and technology.

Practicing “Gracious Professionalism®.”

FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY



- It's a competitive *sport*.
- It's a life *experience*.
- It's *opportunity*.
- It's *community*.
- It's *amazing*.

“ We want to change the culture by celebrating the mind. We need to show kids that it's more fun to design and create a video game than it is to play one.”

Dean Kamen

Founder of FIRST

Progression of Programs...

What's **FIRST**?

- ... never stops building upon itself, starting at age 6 and continuing through middle and high-school levels up to age 18. Young people can join at any level. Participants master skills and concepts to aid in learning science and technology through innovative projects and robotics competitions, while gaining valuable career and life skills.



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- We are a team.
- We do the work to find solutions with guidance from our coaches and mentors.
- We know our coaches and mentors don't have all the answers; we learn together.
- We honor the spirit of friendly competition.

- What we discover is more important than what we win.
- We share our experiences with others.
- We display Gracious Professionalism® and Coopertition® in everything we do.
- We have FUN!

- Jr. FLL – 2 to 6 members ages 6-9 (K-3)
- FLL – 2 to 10 members ages 9-14 (4-8)
- FTC – up to 10 members grades 7-12
- FRC – 15-25 members grades 9-12

Budgets for new teams

What's **FIRST**?

- Jr. FLL – \$75 and up
- FLL – \$850 and up
- FTC – \$1,300 and up
- FRC – \$6,000 and up

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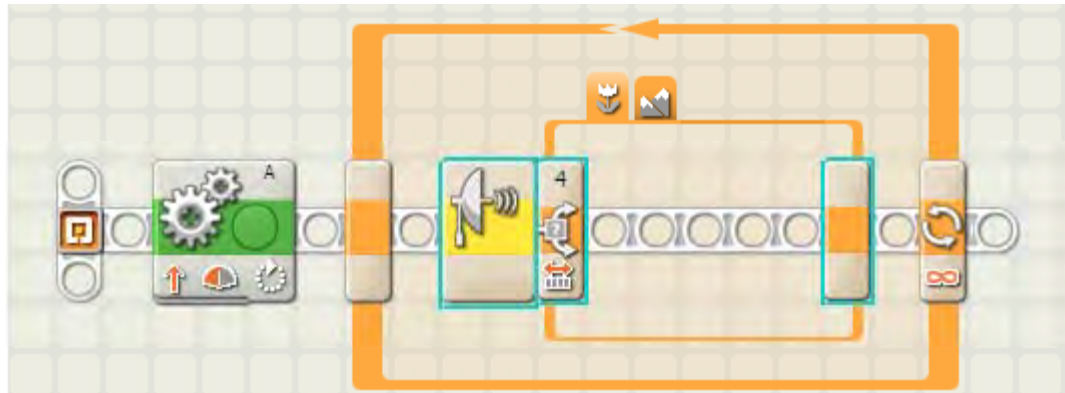
- Jr. FLL – Display “Show me poster” and LEGO model at Expo
- FLL – Autonomous LEGO robot on 4’x8’ field completes missions
- FTC – Two, 2 person team alliances compete on 12’x12’ field
- FRC – Three, 3 person team each of two alliances - on 27’ x 54’ field

- FLL – Research Project. Present an idea for an invention based on theme. Robot design and Core Values awards
- FTC – Research journal presented and judged
- FRC – Win Champion's award through outreach.

- Jr. FLL – none required
- FLL – Software that comes with the robot
- FTC – Labview Subset
- FRC – Full implementation of Labview, optionally Java and C depending on rules.

FLL Sample NXT Programming

What's **FIRST**?



Move

Port: A B C

Direction: ↑ ↓ ↻

Steering: C B A

Power: 90

Duration: 90 Unlimited

Next Action: Brake Coast

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Schedule for Jr FLL

What's **FIRST**?

- Theme announced in August
- Teams Register until March
- Participate in West Tennessee Expo at FLL Championship
- Attend Miscellaneous Expos
- Participate in World Event in April By Lottery

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Jr. FLL – model and “Show me Poster”

What's **FIRST**?



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Schedule for FLL

What's **FIRST**?

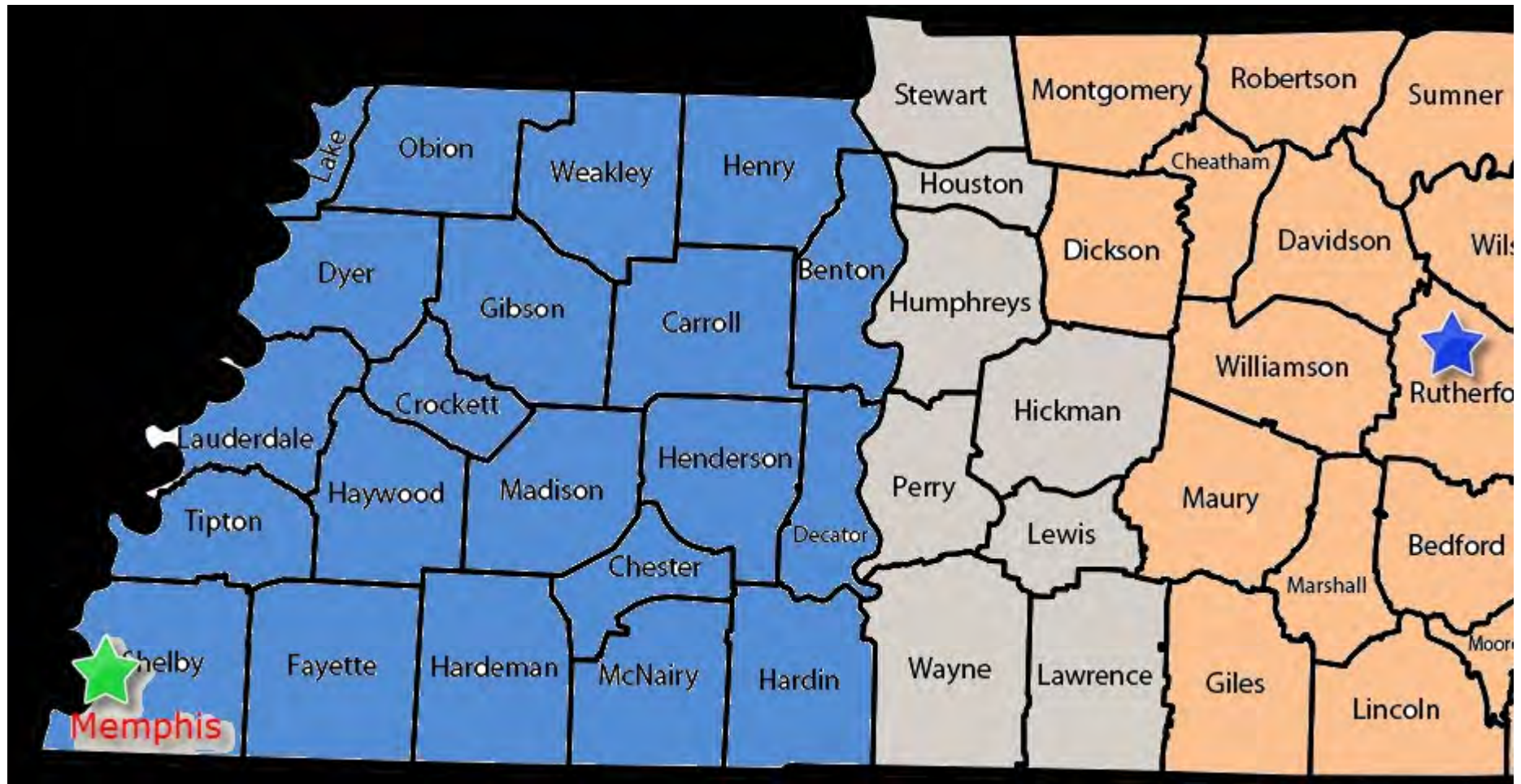
- Theme announced August 26
- Teams Register until September
- Have 8 weeks to build and prepare.
- Participate in West Tennessee Championship at the University of Memphis January 24, 2015
- Participate in World (April) by winning Regional Championship and being **INVITED** by FIRST.

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New FLL West Tennessee Region

What's **FIRST**?

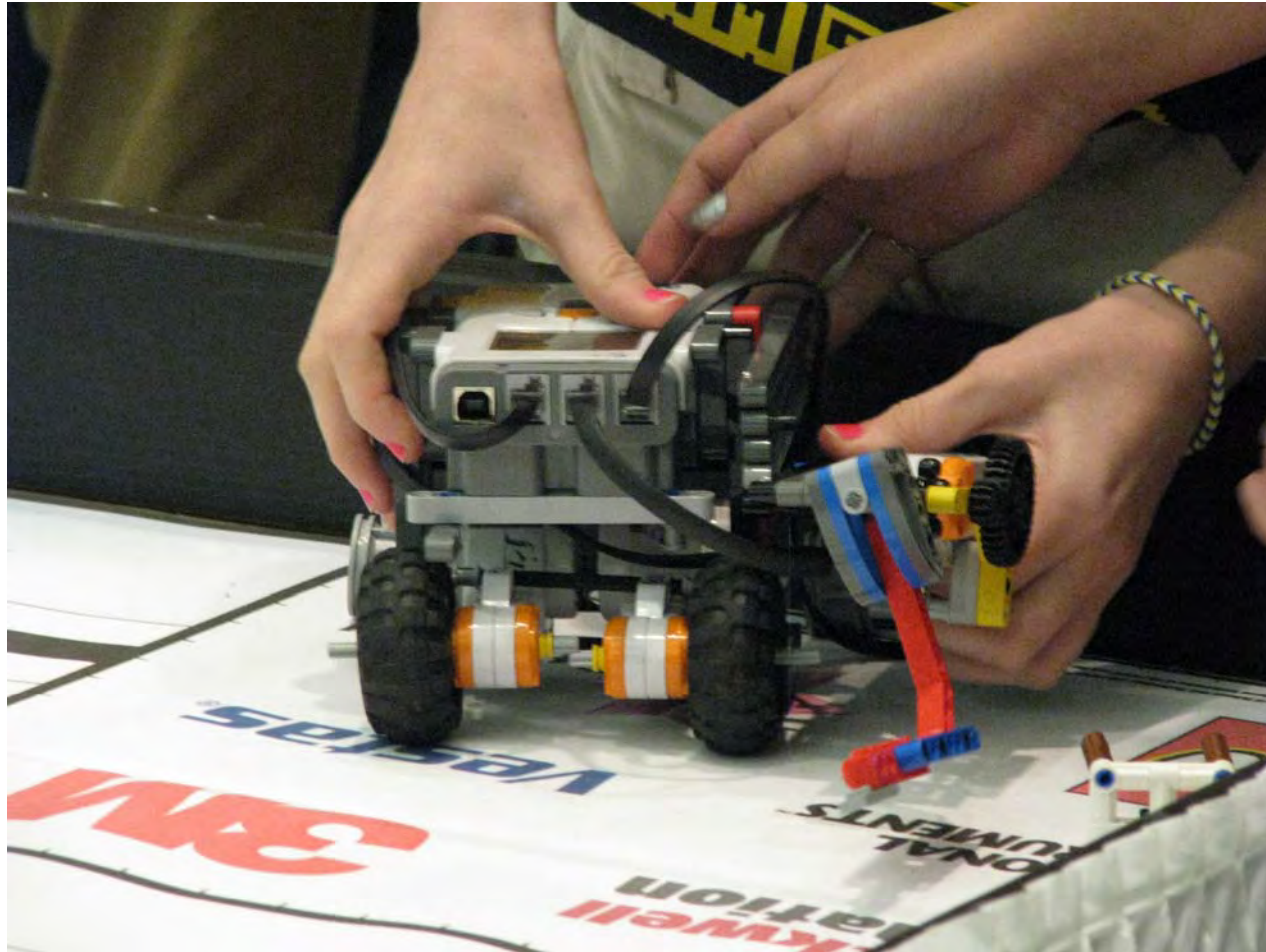


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FLL - Robot

What's **FIRST**?



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FLL Field of Missions

What's **FIRST**?



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Schedule for FTC

What's **FIRST**?

- Theme announced in August
- Teams Register until September
- Have 8 weeks to build and prepare.
- Participate in Tournaments.
- Participate in World (April) by winning Regional Championship and being **INVITED** by FIRST.
- No Official Tennessee Tournament as of today.

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FTC Robot

What's **FIRST**?

FTC Game <http://www.usfirst.org/roboticsprograms/ftc/game>



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FTC Field

What's **FIRST**?



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Schedule for FRC

What's **FIRST**?

- Theme announced in January
- Teams Register until September
- Have 6 weeks to build and prepare.
- Participate in Tournaments.
- Participate in World (April) by winning Regional Championship and being **INVITED** by FIRST.
- Smokey Mountain Regional in Knoxville.

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FRC Robot

What's **FIRST**?



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- 11 to 14 teams in Memphis
- Professor Kohn holds a Quick-Build for new teams.
- He is a FIRST Controls advisor and helps trouble shoot the control systems.

- <http://www.usfirst.org/>
- <http://www.firstlegoleague.org/>
- YouTube <http://www.youtube.com/fllglobal>
- <http://fll.memphisfirstteams.org/>
- <http://memphisfirstteams.org/>
- <http://ortop.org/>

What is Jr.FLL, FLL, FTC, FRC?

What's **FIRST**?

How It Works

PROBLEM SOLVING AND CREATIVITY

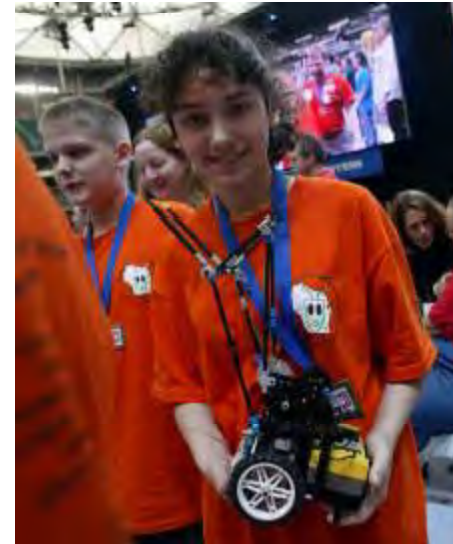
- Present children with a real-world problem
- New scientific theme each year

TEAMS OF CHILDREN AND MENTORS

- Work as a team
- Learn with adults and mentors

DO IT ALL IN A LIMITED TIME WEEKS

- Building, programming, testing, investigating solutions
- May choose to participate in an Official Tournament or local event



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All Teams

- **APPLY** math and science concepts to research, design, build and program robots
- **GAIN** hands-on experience solving real-world problems
 - Robot Game
- **LEARN** from and interact with adult mentors
- **WORK** as a group to overcome obstacles and meet challenges
- **ENGAGE** with their community



FIRST Sponsorship:

- Builds technological literacy in youth
- Strengthens company reputation in the community
- Provides renewed inspiration to company engineers and employees
- Engages employees in volunteerism opportunities
- Provides employee team building and training opportunities
- Inspires future careers in STEM area



Become a Volunteer:

- Help children discover the fun in science and technology
- Have a positive impact on the lives of children
- Help celebrate science and technology
- Network with like-minded professionals
- Be inspired and energized through your participation
- Volunteers must sign up on VMS so FIRST can perform a background check.



Volunteer Opportunities:

- Coach (Two Required)
- Mentor a team
- Help with fundraising
- Recruit new teams
- Volunteer at an FLL or Jr.FLL event
 - e.g. Judge or Reviewer/Referee



“There’s something about changing a young person’s life and giving them direction that keeps me going.”

General Motors *FIRST* Volunteer

Become a Coach or Mentor:

- Empower children with a sense of accomplishment
- Provide valuable one-on-one interaction
- Be respected and admired by team members
- Be inspired and energized through your participation



“I love working with these kids! I’m amazed and inspired by what they can accomplish, and their enthusiasm and energy is contagious.”

Kristen Kelso, FLL Coach and Judge, former *FIRST* Robotics Competition participant

Opportunities:

- Spread the word about FLL and Jr.FLL
- Encourage parents to form teams
- Provide space for teams to work
- Hold an unofficial scrimmage
- Hold a Qualifier
- Bring FLL or Jr.FLL into the classroom



"I have been teaching for 31 years and this is one of the best programs I have ever seen!"

David Mills, Technology Education Teacher

Opportunities:

- Host an FLL tournament or Jr.FLL expo for the community
- Recruit students to mentor/coach teams
- Recruit volunteers
- Contact local elementary and junior high schools
- Get the word out to alumni



How do we start?

What's **FIRST**?

- Start a robot club
- Organize team
- Find Funding
- Display Core Values.
- Research previous seasons on FIRST and YouTube
- Register with FIRST

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Problem Solving

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TEST AND
EVALUATE

BUILD MODEL

REFINE PROBLEM

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FLL Team assignments.

What's **FIRST**?

- Everyone cannot do the same job
- Jobs can be rotated
- Need at least two programmers
- Need rules expert to check website
- Need a communications officer to communicate to the donors and community

Most Importantly

What's **FIRST**?

- Have Fun

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