



2017-2018
FTC Alberta Championship

TELUS World of Science in Edmonton, Alberta

Hosting Sponsor

Presenting Sponsor





**FIRST
LEGO
LEAGUE JR.**

**FIRST
LEGO
LEAGUE**

**FIRST
TECH
CHALLENGE**

**FIRST
ROBOTICS
COMPETITION**

Grades K-3

Grades 4-9

Grades 7-12

Grades 9-12

Welcome to the **FIRST**® Tech Challenge

FIRST® Tech Challenge is designed for students in grades 7-12 to compete head to head, using a sports model. Teams are responsible for designing, building, and programming their robots to compete in an alliance format against other teams. The robot kit is powered by Android technology, reusable from year-to-year and is programmed using Java. Teams, including Coaches, Mentors and Volunteers, are required to develop strategy and build robots based on sound engineering principles. Awards are given for the competition as well as for community outreach, design, and other real-world accomplishments.

“...to create a world where science and technology are celebrated...
where young people dream of becoming science and technology leaders.”
- **FIRST** Founder, Dean Kamen



About **FIRST**® Tech Challenge

FIRST Tech Challenge is an exciting and fun global robotics program that ignites an enthusiasm for science, technology and discovery in young people and teaches them STEM skills and concepts, principles of leadership, and how to work as a team.

The competitions are the result of focused brainstorming, dedicated mentoring, project timelines and teamwork. Paired with technical mentors, teams learn from and play with the “pros” to experience engineering problem solving first-hand.

- Entices kids to think like scientists and engineers
- Provides a fun, creative, hands-on learning experience
- Teaches kids to experiment and overcome obstacles
- The skills that they learn make math and science tangible, accessible and real
- Teams learn to document their design ideas and discoveries
- Builds self-esteem and confidence
- 90% of participating students report learning how STEM can solve real-world problems

Event Schedule - Saturday January 27th

8:00 - 12:00	.....	Team registration, pit opens
9:00 - 5:00	.....	Inspections, practice matches
10:00 - 12:00	.....	Judge presentation
12:00 - 1:00	.....	Lunch
1:00 - 3:00	.....	Judge presentation
3:30 - 5:00	.....	Workshops for teams, by teams!
5:15 - 6:15	.....	Dinner Event at Purple Pear (\$)
5:30	.....	Pit closes
6:15 - 7:00	.....	<i>Dream Big @ the IMAX Theater (\$)</i>

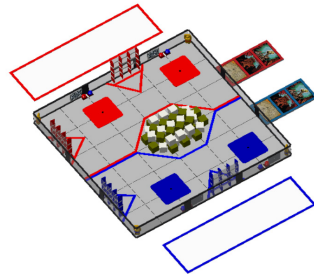
Times are approximate and subject to change.

(\$) Preregistration is required to be part of this event. Offer only to participating teams.

Event Schedule - Sunday January 28th

8:00 - 8:30	.....	Team check-in, pit opens
8:45	.....	Drivers' meeting, matches schedule distribution
9:00 - 9:30	.....	Opening ceremony
9:30 - 12:00	.....	Qualification matches
12:00 - 12:30	.....	Lunch
12:30 - 2:30	.....	Qualification matches resume
2:30 - 3:00	.....	Alliance selection
3:00 - 4:00	.....	Elimination – Semi final rounds
4:00 - 4:30	.....	Elimination – Final matches
4:30 - 5:00	.....	Award and closing ceremony

Times are approximate and subject to change.



The 2017-2018 Game:

FIRST RELIC RECOVERYSM Presented by Qualcomm[®] Incorporated is played on a 12 ft. x 12 ft. (3.7m x 3.7m) square field with approximately 1 ft. (0.3m) high walls and a soft foam mat floor. The object of the game is to attain a higher score than the opposing alliance by (1) scoring Glyphs into the Cryptoboxes and completing rows, column, and ciphers, (2) transferring Relics to the Recovery Zone, (3) retrieving Jewels, (4) parking on the Balancing Stones, and (5) navigating to specific parts of the Playing Field.

The field is divided in the middle into a “red” and a “blue” side corresponding to the two alliances. In the center of the field is a taped off area that hold the Glyphs. The scoring elements for FIRST RELIC RECOVERYSM are 48 alliance-neutral Glyphs (24 gray and 24 brown), 8 alliance-specific Jewels (4 per alliance) and 4 alliance-specific Relics (2 per Alliance). There are 4 alliance-specific Cryptoboxes (2 per Alliance) with taped off safe zones in front of each.

There are 4 alliance-specific Balancing Stones (2 per Alliance) on which Robots begin and end the game. There are also 2 off-field alliance-specific Recovery Zones where robots place recovered Relics at the end of the match. Matches have two distinct periods of play: a 30-second Autonomous period followed by a two-minute Driver-Controlled period. The last 30 seconds of the Driver-Controlled period is called the End Game which adds new scoring opportunities for robots to achieve.

Autonomous Period:

During the Autonomous period, Robots operate using only pre-programmed instructions. Alliances earn points by: (1) selecting and removing opponent colored Jewels from platforms, (2) scoring Glyphs into the Cryptoboxes, and (3) parking their Robot in a Safe Zone in front of their Cryptobox.

Driver-Controlled Period:

During the Driver-Controlled period, alliances earn points by: (1) Scoring Glyphs into their Alliance’s Cryptoboxes and (2) Creating Cipher patterns with their Glyphs in the Cryptoboxes. End Game

End Game:

The final 30 seconds of the Driver-Controlled Period is called the End Game. In addition to the previously listed Driver-Controlled Period scoring activities, alliances earn points by (1) moving their Relics to safety in their Recovery Zone and (2) balancing Robots on the Balancing Stones.

Game Scoring Information

Autonomous Period Scoring:	Points
Alliance-specific Jewel remaining on platform	30
Glyph scored in Cryptobox	15/Glyph
Glyph bonus for Cryptobox Key column	30
Robot Parked in Safe Zone	10
Driver-Controlled Period Scoring:	
Glyph scored in Cryptobox	2/Glyph
Completed Row of 3 in Cryptobox	10
Completed Column of 4 in Cryptobox	20
Completed Cipher	30
End Game Scoring:	
Relic in Recovery Zone #1	10
Relic in Recovery Zone #2	20
Relic in Recovery Zone #3	40
Bonus for keeping Relic Upright	15
Robot balanced on Balancing Stone	20

Participating Teams

Team	Team Name	School/Organization	City
4169	18-Inchers	Lacombe Composite High School	Lacombe
5009	Helios	École Maurice-Lavallée	Edmonton
5424	M&M	Lacombe Composite High School	Lacombe
8038	Duct Tape and Prayers	Lillian Osborne High School	Edmonton
9555	Power Potatoes	Lillian Osborne High School	Edmonton
10015	SWAT Bots	Community Team	Airdrie
10325	Wilson Robotics	Wilson Middle School	Lethbridge
10544	Cyber Eagles	Strathcona Christian Academy	Sherwood Park
11639	OpCom	Progressive Academy	Edmonton
11712	Aberhart Robotics Republic (Orange)	William Aberhart High School	Calgary
11722	Real Virtuality	Community Team	Edmonton
11917	Sting Robotics	Fort Saskatchewan High School	Fort Saskatchewan
12055	BP Robotics Club	Bishop Pinkham School	Calgary
12094	Team TWOSE	Community Team	Edmonton
12204	Onoway LiveWires	Onoway Junior Senior High School	Onoway
12265	GearHeads	ADLC	Calgary
12336	STEM Squad	Bentley School	Bentley
12513	Les Scorpions	École Alexandre-Taché	St Albert
12677	Elboya Matrix 77	Elboya School	Calgary
13000	Data Wolves	Mount Columbia Institute of Technology	Calgary
13386	Team Jasmine	Community Team	Calgary
13437	Manning Robotics	Ernest Manning High School	Calgary
13479	Xplorobotics	Community Team	Calgary
13506	OLS	Our Lady of the Snows Catholic Academy	Canmore
13577	Meme Team	Lacombe Composite High School	Lacombe
13765	Commodore 64	Bentley School	Bentley
13793	Rambotics	Lacombe Composite High School	Lacombe
13858	JFHS Falcons	James Fowler High School	Calgary
13898	Aberhart Robotics Republic (White)	William Aberhart High School	Calgary
13904	Legal Circuit Breakers	Community Team	Legal
14021	SRT 1 - Team Pringles	Springbank High School	Calgary
14022	SRT 2 - RATOM	Springbank High School	Calgary
14023	SRT 3 - The FIRST Men	Springbank High School	Calgary

FIRST Tech Challenge Awards

Dean's List

FIRST Dean's List Finalists are outstanding student leaders whose passion for and effectiveness at attaining FIRST ideals is exemplary. These students were nominated by their teams for their direct contributions and impact on others exemplifying leadership and commitment, on their FTC team, in their school, and in their community. FIRST Dean's List Finalists, recognized here today, are also our nominees for the FIRST Dean's List at the Championship.

Inspire Award

The highest award that a team can be given.

This judged award is given to the team that truly embodied the "challenge" of the program. The team that receives this award is a strong ambassador for FIRST® programs and a role model team. This team is a top contender for many other judged awards and is a gracious competitor. The Inspire Award winner is an inspiration to other teams, acting with *Gracious Professionalism*® both on and off the Playing Field.

Rockwell Collins Innovate Award

Bringing great ideas from concept to reality.

This judged award celebrates a team that not only thinks outside the box, but also has the ingenuity and inventiveness to make its designs come to life. This judged award is given to the team that has the most innovative and creative robot design solution to any or all specific field elements or components in the game.

Design Award

Industrial design at its best.

This judged award recognizes design elements of the robot that are both functional and aesthetic. All successful robots have innovative design aspects; however, the Design Award is presented to teams that incorporate industrial design elements into their solution.

Motivate Award

Sparking others to embrace the culture of FIRST!

This team embraces the culture of FIRST and clearly demonstrates what it means to be a team. This is a team who makes a collective effort to make FIRST known throughout their school and community, and sparks others to embrace the culture of FIRST.

Connect Award

Connecting the dots between community, FIRST, and the diversity of the engineering world.

This judged award is given to the team that most connects with their local science, technology, engineering and math (STEM) community.

Think Award

Removing engineering obstacles through creative thinking.

This judged award is given to the team that best reflects the journey the team took as they experienced the engineering design process during the build season. The Engineering Section of the notebook is the key reference for judges to help identify the most deserving team.

Judges Award

Judges own's award!

During the course of the competition, the judges may encounter a Team whose unique efforts, performance or dynamics merit recognition, yet doesn't fit into any of the existing award categories. To recognize these unique Teams, FIRST offers a customizable judges award.

Control Award

Mastering robot intelligence.

This judged award celebrates a team that uses sensors and software to enhance the robot's functionality on the field.

Elimination Tournament Awards

Mastering robot intelligence.

The winning alliance and finalist alliance are both recognized for their achievement in robot game performance.

Match Play and Elimination

During the **Qualifying Matches**, teams are randomly assigned into alliances of two teams. A team's alliance partner in one match may be their opponent in another match.

Team Rank: Teams will be ranked by their total Qualifying Points (QPs). If multiple teams have the same QP total, then they will be ranked by their Ranking Points (RPs). If multiple teams have the same RP total as well, then they will be ranked by their highest match score. If still tied, the next highest match score will be used until the tie is broken.

Qualifying Points: Teams receive 2 points for a win, 1 for a tie, and 0 points for a loss or disqualification (DQ).

Ranking Points: All teams in a match receive the score of the losing alliance before penalties unless they have a DQ (which gives that team 0 RP).

Alliance selection is held after all of the qualifying matches. Four alliance captains are selected based on team rank. These captains then pick one or two additional teams (based on event size) to be their alliance partners for the Elimination Matches. A competition with more than 20 teams will have alliances of three teams.

Elimination Matches: Alliances get a win, loss or tie. The advancing alliance is the first one to win two matches.

FIRST Values

Gracious Professionalism® is part of the ethos of FIRST. It's 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. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended.

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.

Team Advancement

Teams advance from the *FIRST* Tech Challenge Alberta Championship Tournament directly to the *FIRST* Tech Challenge World Championship in the order indicated below, according to the number of spots available. Alberta takes part in the Houston *FIRST* World Championship and we are allowed to send two teams.

1. Inspire Award Winner
2. Winning Alliance Captain
3. Inspire Award, 2nd place
4. Winning Alliance Partner, 1st team selected
5. Inspire Award, 3rd place
6. Winning Alliance Partner, 2nd team selected
7. Think Award Winner
8. Finalist Alliance Captain
9. Connect Award Winner
10. Finalist Alliance Partner, 1st team selected
11. Rockwell Collins Innovate Award Winner
12. Finalist Alliance Partner, 2nd team selected
13. Design Award Winner
14. Motivate Award Winner
15. Control Award Winner

Thank You!

Thank you to all who help make this program possible for our youth. *FIRST*® could not exist without the support of the army of mentors, parents, teachers, and volunteers who step up to provide their time and expertise to inspire our young people to get excited about science, technology, engineering and math.

Our Volunteers!

Logan Arcilla : Field Manager Assistant

Phoebe Arcilla: Judge

David Caron: Head referee

Jean-Marc Cloutier: Field Technical Advisor

Marc de Montigny: Judge

Ronald Déry: Game announcer

Félix Dionne: Robot Inspector, Score Tracker

Jacques Dionne: Robot Inspector

Michael Frost: Photographer

Michel Gariépy: Field Manager

Éric Gorsy: Scorekeeper

Serge Grenier: A/V & Streaming

Pierre Hébert: Control System Advisor

Gordon Hodgkinson: Photographer

James Hryniw: Field Technical Advisor

Thomas Hryniw: Control System Advisor

Purvish Jajal: Score Tracker

Karen Kwong: Referee

Rock Larochelle: Video

Jenny Lee: Queuer

Henri Lemire: Judge

Robert Litchfield: Referee

Philippe Manseau: Tournament Director

Sandra Manseau: Referee

Katherine McKinnon: Dean's List

Brian McLachlin: Judge Advisor

Johanne Melançon: Registration Desk

Lucie Melançon: Registration Desk

Luc Melançon: Queuer

Modeste Messou: Photographer

Jericho Mojica: Score Tracker

Jean Mongrain: Judge

Jasmin Ouellet: Judge

Vlad Pasek: Judge

Steve Ricketts: Photographer

Gabriel Risbud-Vincent: Score Tracker

Fred Rushworth: Photographer

Jonathan Sonmor: Judge

Jorge Soto Mendoza: Queuer

Russell Weir: Dean's List

Our partners!

