

Howdy Bots Rodeo 2026

HAY HARVEST



Team Update 1

Introduction

Welcome to the 5th Annual Howdy Bots Rodeo, and this year's game, HAY HARVEST. The Rodeo was created by the Howdy Bots and used as a training event for their students. For the first time ever, the Rodeo has been written by a group of Howdy Bots (6377), Lady Cans (2881), and Spring Konstant (6357) members. The official rules for this year's game begin on page 4 of this manual.

In addition to the game specific rules, there are a few items to keep in mind as you prepare for the Rodeo:

- The teams are selected by mentors in an effort to both mix up the student group and to level the playing field. There will be no swapping teams. If teams become too unbalanced (unforeseen absences, etc), the mentors reserve the option to reassign students during the build season.
- The Robot chassis are assigned to each team by the mentors. You must use this chassis. No swapping or new chassis.
- Each team will be allocated a certain number of motors and motor controllers. You may not exceed this number or swap out for different types of motors.
- Each team must have a team name (and it must pass the grandmother test).
- Each team must pick a valid team number (but not 6377, 2881, 6357, 2789, nor 9506).
- Your robot must generally meet standard FRC robot rules for safety (mentors will inspect).
- Your battery must be secure and safe! Batteries will be a shared resource.
- Your robot must have bumpers. Color doesn't matter.
- Teams are encouraged to use the full Howdy Bots manufacturing capability, however, there may be bottlenecks for the mill and router.
- Rules are subject to change! Notices and rule updates will be posted in #rodeo-2026. All rules Q&A must be posted in #rodeo-2026 so that all teams have access to the information.
- Old McMarchman (a.k.a. Evan Marchman) will be the final arbiter of any disputes.

"Open Alliances"

- Each team will be given a public (team-wide) Slack channel they will be required to use to make status updates after each meeting day (what you accomplished that day, what the goals are for the next meeting day, and what help is needed); this will be the primary way the Mentors will decide how we allocate our focus during the next meeting. Each team will be responsible for selecting a TEAM LEAD to take on this responsibility.
- Teams are also highly encouraged to document their general progress, observations, prototypes, etc, within their Slack channel for other teams to read and learn from; while this is a competition, our #1 goal for the Rodeo is for the team as a whole to learn, and build the best set of robots possible.
- Teams will be given a template to use to create their open alliance posts.

Timeline:

- Sat 8/29 - Kickoff!
- Wed 9/2 - Team Assignments
- Sat 9/5 (by 5:00pm)- Team Name and Number submission due to Old McMarchman (via Slack #rodeo-2026)
- Wed 9/23 - Midway check-in / design review with mentors (teams should have a fairly complete idea of their robot design and be in stages of manufacturing / assembly)
- Sat 10/17 - "Week 0" event (teams will have the opportunity to play a few practice matches and tape the floor)
- Sat 10/24 - The Rodeo!
 - Note: **parents, friends and sponsors are strongly encouraged to attend the Rodeo!**

Awards:

- Tournament Champions
- Will be given in a future Team Update

Table of Contents

Introduction	2
Table of Contents	3
Game Overview	4
Arena	5
Field	5
ALLIANCE AREA	6
STABLE	6
OUTER CROP CIRCLE	7
INNER CROP CIRCLE	7
HAYBINE	7
ALLIANCE SIDE	8
HAY	8
Match Play	8
Field Setup	9
Scoring	9
Point Values	10
Rule Violations	10
Game Rules: ROBOTS	11
Game Rules: HUMANS	12
ROBOT Construction Rules	13
Tournament Play	14
Qualification Matches	14
Finals	14
Sound Effects	15
Team Update 1	16

HAY HARVEST

Game Overview

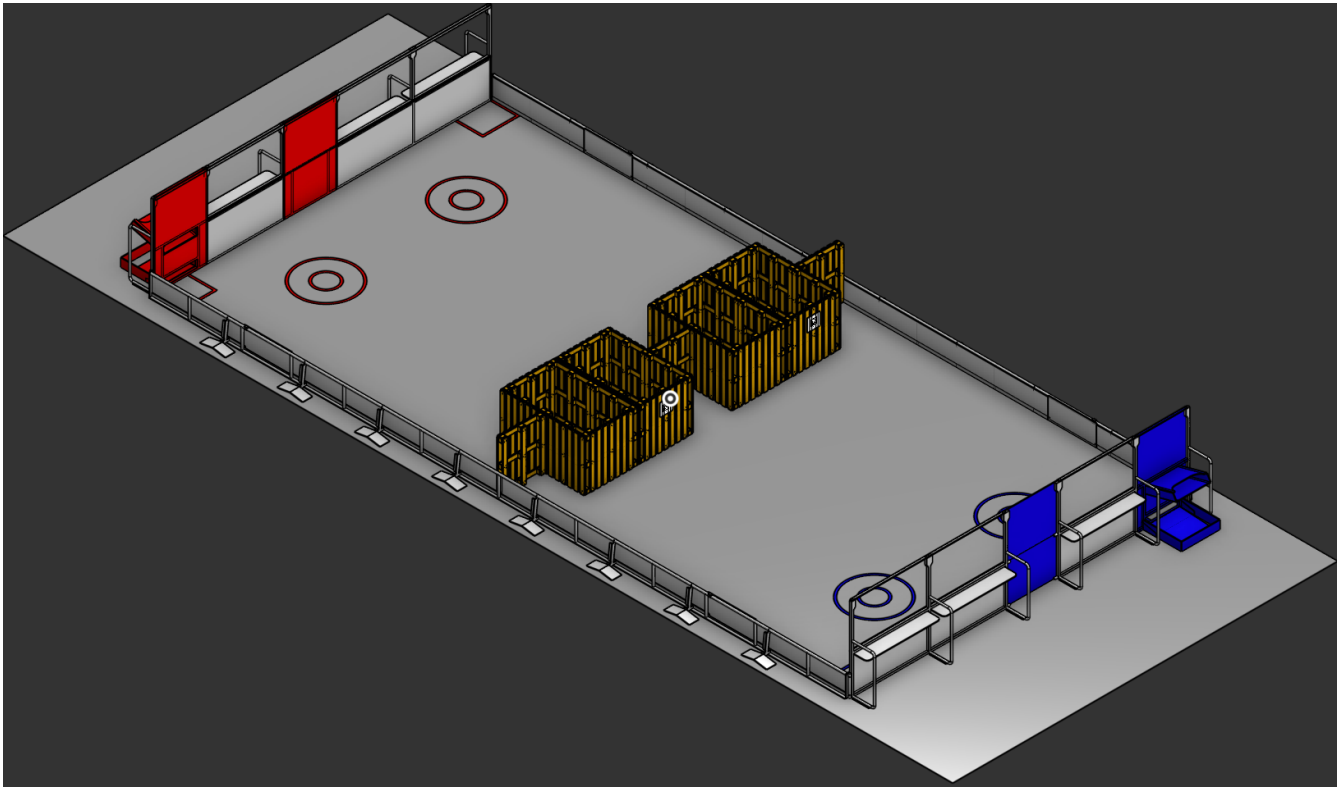
Howdy there, FARMERS! It's another early morning on the farm! Time to fire up your ROBOTS and start harvesting! In HAY HARVEST, 2 ALLIANCES of 2 teams each must HITCH UP their ROBOTS in order to harvest and feed HAY into their STABLES. By the time the dinner bell rings, ROBOTS can BALE remaining HAY and/or TURN IN for the night.

Before the farmers wake up, at the start of the MATCH, each ROBOT is staged within one of their OUTER CROP CIRCLES, and may be preloaded with up to one HAY. During the first 20 seconds of the MATCH, ROBOTS are AUTONOMOUS, and HITCH UP by leaving their OUTER CROP CIRCLE, feed HAY into their STABLES, and TURN IN back to their OUTER CROP CIRCLE before their farmers wake up,.

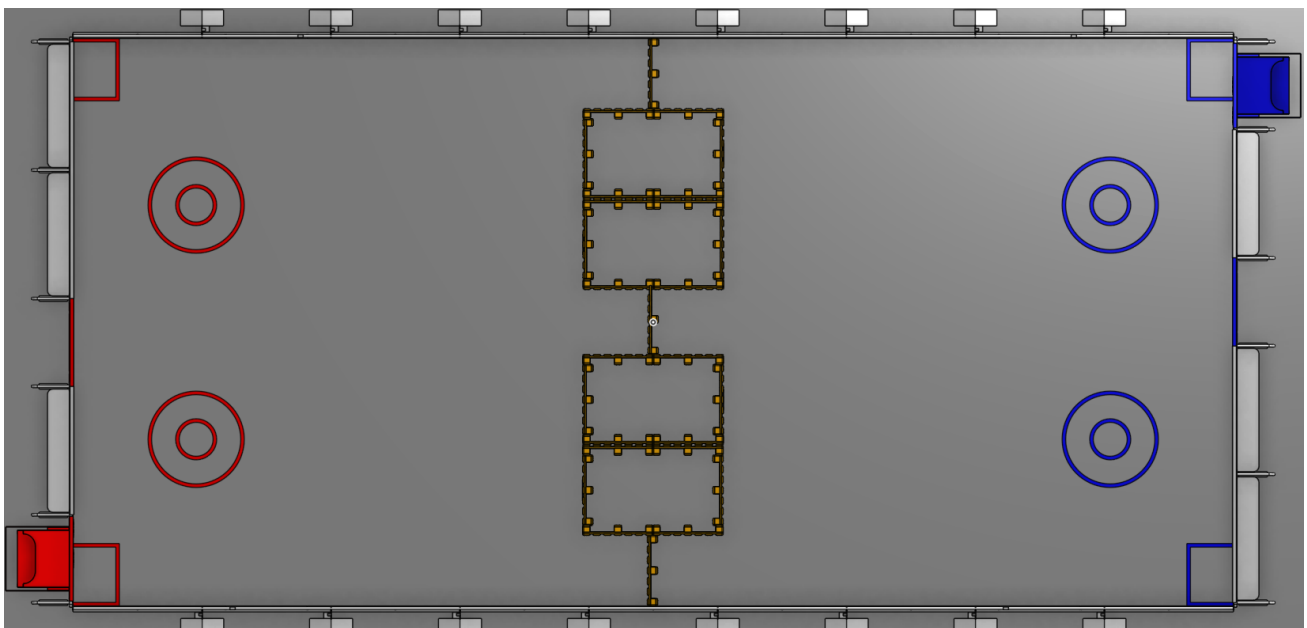
When the rooster calls, for the remaining 180 seconds of the MATCH, DRIVERS take control of their ROBOTS and continue to score HAY to feed their livestock and are replenished by FARM HANDS through the HAYBINE. At the end of the MATCH, ROBOTS that maneuver HAY into an INNER CROP CIRCLE to BALE it or ROBOTS that TURN IN can earn bonus points! The ALLIANCE with the most points at the end of the MATCH wins!

ARENA

FIELD



The playing FIELD for HAY HARVEST is an approximately 317.7in (~8.07m) wide by 651.2in (~16.54m) long carpeted area bounded by and including the inward and upward-facing surfaces of the ALLIANCE WALL, GUARDRAILS which are 20.5 inches high, and OUTPOSTs.



The FIELD is populated with the following elements:

- 8 HAY (4 on each ALLIANCE SIDE, 2 of which are preloaded for each ALLIANCE)
- 4 STABLES (2 for each ALLIANCE)
- 4 OUTER CROP CIRCLES & 4 INNER CROP CIRCLES (2 on each ALLIANCE SIDE)
- 4 HAYBINES (2 on each ALLIANCE SIDE)

The OUTPOSTs are not intended to be part of play, but rather are kept from the 2026 season REBUILT to make FIELD assembly quicker.

ALLIANCE AREA

An approximately 360in wide by 134in deep (~9.14m by 3.4m) infinitely tall volume formed by, and including the ALLIANCE WALL, the edge of the carpet, OUTPOSTs, and ALLIANCE colored tape perpendicular to the DRIVER STATIONS.

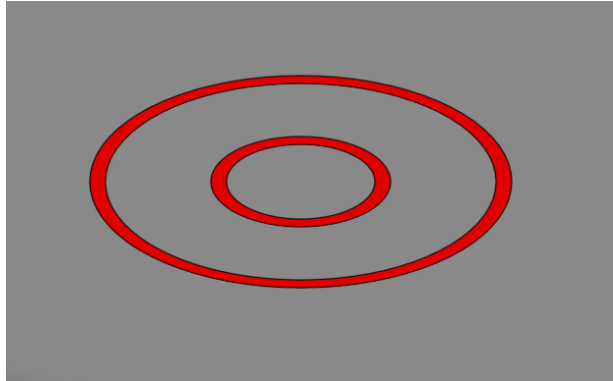
For all FIELD dimensions, refer to the FIELD CAD, and note that all dimensions are subject to change. Changes will be announced in a team update.

STABLES



Each STABLE consists of pallets that are assembled such that the STABLE is approximately a 48" by 96" shelled rectangular prism with 0.6" thick walls that is 48" tall. There are 2 STABLES per ALLIANCE. Each STABLE will have an indicated ALLIANCE color affixed to the ALLIANCE WALL facing side of the STABLE to indicate which ALLIANCE any HAY scored in that STABLE will be rewarded to.

OUTER CROP CIRCLES

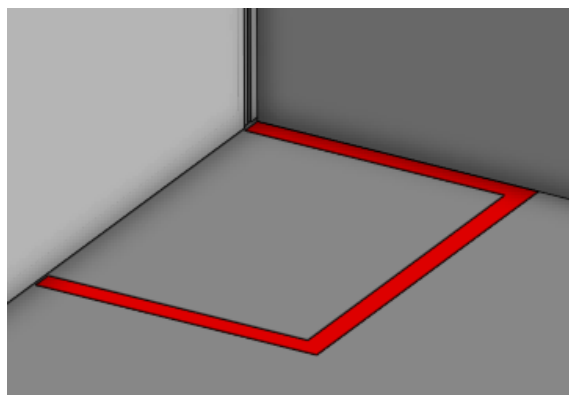


Each OUTER CROP CIRCLE is approximately a 54" diameter circle made up of ALLIANCE colored tape. There are 2 OUTER CROP CIRCLES per ALLIANCE.

INNER CROP CIRCLES

Each INNER CROP CIRCLE is approximately a 26" diameter circle made up of ALLIANCE colored tape that is approximately centered within each OUTER CROP CIRCLE. There are 2 INNER CROP CIRCLES per ALLIANCE.

HAYBINE



A HAYBINE is a 25" by 35" rectangle made up of ALLIANCE colored tape and the edge of the ALLIANCE WALL. HUMAN PLAYERS may use the HAYBINE to enter HAY onto the field by bouncing, rolling, or any other manner of putting the HAY on the FIELD such that the first contact of the HAY on the FIELD is on the HAYBINE.

ALLIANCE SIDE

The ALLIANCE SIDE is the volume created by the outward facing surfaces of the STABLEs, GUARDRAILs, ALLIANCE WALL, OUTPOSTs, and carpet. There are 2 ALLIANCE SIDEs—whether a ALLIANCE SIDE belongs to the red or blue ALLIANCE will be indicated by the color of the tape of the OUTER CROP CIRCLES, INNER CROP CIRCLES, and HAYBINEs.

HAY



Each HAY is 16.25 in. (~413 mm) $\pm$ ¼ in. (~6 mm) diameter rubber playground ball, previously as seen in the 2025 FRC game REEFSCAPE, as the ALGAE game element.

MATCH Play

MATCH TIMING

HAY HARVEST is played in a 20 second AUTONOMOUS period and a 180 second TELEOPERATED period. Between the AUTONOMOUS period and the TELEOPERATED period there is approximately a 3 second delay.

FIELD SETUP

GAME ELEMENTS

- 8 HAY are staged on the FIELD, 4 HAY on each ALLIANCE SIDE.
- There are (TBD) HAY staged off the FIELD behind the HAYBINES, divided equally such that there are (TBD) HAY staged behind each HAYBINE.
- Each ROBOT may be pre-loaded with up to one HAY.
- Any HAY that is staged on the FIELD and is not pre-loaded must be staged by the ALLIANCE at any point of their choosing provided that the HAY is contacting the ALLIANCE WALL and carpet/HAYBINE.

The amount of HAY staged off the FIELD is still TBD, it will be announced in a team update.

ROBOTS

- ROBOTS begin the MATCH in their STARTING CONFIGURATION, and must be staged such that their BUMPERS are completely contained within the OUTER CROP CIRCLE.

HUMANS

- DRIVERS and COACHES stage inside their ALLIANCE AREA. The DRIVE TEAM must remain at least 1 foot away from the DRIVER STATION until the end of AUTONOMOUS.
- HUMAN PLAYERS stage with the DRIVE TEAM until the end of AUTONOMOUS, at which point they may go to the area behind the HAYBINE.

SCORING

- An ALLIANCE earns FEEDING points when a HAY's volume at least partially intersects with the volume created by the inward facing surfaces of the respective ALLIANCE colored STABLE and the outward facing surface of the carpet at the end of the MATCH or during AUTONOMOUS. Any HAY in the previously described state is considered to be in the scored state once it has come to a stop. Any HAY scored in the STABLE during the AUTONOMOUS period are assessed and scored manually by volunteers. All HAY contained within the STABLES that weren't scored in AUTONOMOUS are SCORED at the end of the MATCH.
- An ALLIANCE earns BALE points when a HAY's contact point on the floor is completely within the INNER CROP CIRCLE's outer edge. The assessment of BALE points is made approximately 5 seconds after the end of the match.
- A ROBOT earns TURN IN points when its BUMPERS are completely contained within an OUTER CROP CIRCLE. The assessment of TURN IN points is made approximately 5 seconds after the match for TELEOP points or at the end of AUTONOMOUS for AUTO points.
- A ROBOT earns HITCH UP points when its BUMPERS have completely left their starting OUTER CROP CIRCLE at any point during the AUTONOMOUS period.

As per the 2026 GAME MANUAL, ROBOTS may not use GAME ELEMENTS to ease or amplify the challenge of game tasks.

POINT VALUES

		MATCH Points		Ranking Points
		AUTO	TELEOP	
HITCH UP	A ROBOT leaves the OUTER CROP CIRCLE	2	-	
TURN IN	A ROBOT is inside a OUTER CROP CIRCLE	2	10	
FEEDING	HAY scored in the STABLE	10	5	
BALE	HAY inside a INNER CROP CIRCLE	-	20	
COOPERTITION BONUS	At least one HAY is scored in each of the four STABLES	The ROUGHAGE BONUS threshold is lowered to 12 HAY scored in the STABLES		
ROUGHAGE RP* - 15 HAY scored in the STABLES				1
EARLY BIRD RP* - 3 HAY scored in the STABLES in AUTONOMOUS				1
Tie	Completing a MATCH with the same number of MATCH points as your opponent			1
Win	Completing a MATCH with more MATCH points than your opponent.			2

*The 2026 Howdy Bots Rodeo Game Design Committee reserves the right to change the requirements for ranking points/coopertition points at any time, including but not limited to upon first seeing teams practicing with their robot in an effort to maximize competitiveness. Any changes will be announced in a team update.

RULE VIOLATIONS

Penalty	Description
FOUL	A credit of 10 points toward the opponent's MATCH score
MAJOR FOUL	A credit of 20 points toward the opponent's MATCH score
YELLOW CARD	For particularly egregious or dangerous ROBOT or team activities. You will likely receive a rear chewin', and multiple YELLOW CARDS will result in your team being disqualified from the remainder of the competition.
DISABLED	The state in which a ROBOT is commanded to deactivate all outputs, rendering the ROBOT inoperable for the remainder of the MATCH

HAY HARVEST uses 4 words in the context of how rules and violations are assessed in deliberate ways. These words provide general guidance to describe benchmarks to be used across the competition. It is not the intent for REFEREES to provide a count during the time periods.

- EXCESSIVE describes rule violations where the REFEREES deem the action unnecessarily severe or preventable
- MOMENTARY describes rule violations that happen for fewer than approximately 3 seconds
- REPEATED describes rule violations that happen more than once within a MATCH
- INTENTIONAL describes rule violations that appear to be deliberately caused in order to provide a strategic advantage to the violating ALLIANCE

This is an offseason, learning-first event - we don't want damaged robots or field elements, so use proper judgment on aggressive actions.

Game Rules: ROBOTS

G402, G409 - G420: per 2026 game manual.

G501: Stay on your FARM! Extension past the mid-line with any part of a ROBOT is strictly prohibited.

- Violation: MAJOR FOUL per instance
- If REPEATED, YELLOW CARD

TEAMS are encouraged to design and operate their ROBOTS in a manner that makes it clear to the REFS they comply with this rule.

G502: Hold your HAY! Alliances cannot cause HAY to exit the field INTENTIONALLY.

- Violation: WARNING at referee discretion for excessive offenses
- If REPEATED, YELLOW CARD

G503: Don't go crop-crazy! Only 8 HAY can be on each ALLIANCE SIDE at once. HUMAN PLAYERS may not enter any HAY onto the FIELD if the ALLIANCE already has 8 HAY on its ALLIANCE SIDE.

G503 is worded as it is to prevent TEAMS from INTENTIONALLY overshooting to cause extra HAY to cause the opposing ALLIANCE to violate G503.

- Violation: WARNING for first instance

- If REPEATED, MAJOR FOUL

G504: Keep HAY in the STABLE! ROBOTS may not cause any HAY to exit the scored state (previously defined in the SCORING section) via an INTENTIONAL action either directly or transitively via a game piece.

- Violation: MAJOR FOUL per instance
- If REPEATED, YELLOW CARD

G505: Don't overshoot HAY. HUMAN PLAYERS may not introduce HAY onto the FIELD such that the HAY makes its first contact with the FIELD outside the HAYBINE (i.e the HAY doesn't contact any part of the HAYBINE on its first contact with the FIELD) or it makes first contact with a ROBOT.

- Violation: FOUL per instance

G506: Don't overload HAY. ROBOTS may not be in control of more than one HAY for more than a MOMENTARY amount of time.

- Violation: FOUL per instance

G507: No double dipping. An ROBOT can only earn TURN IN points if there isn't a HAY in the INNER CROP CIRCLE that is centered about the same point as the OUTER CROP CIRCLE the ROBOT is attempting to earn TURN IN points in.

HUMAN PLAYERS are encouraged to introduce HAY into the FIELD such that it is clear to the REFEREES that they comply with G505

Game Rules: HUMANS

For more detail regarding each rule, read the [2026 Game Manual](#). Additionally, any intentionally excluded rules will be noted below, and will not appear in this list.

Personal Safety

G101 *You reach, I teach. Any team members, including but not limited to DRIVE TEAM and HUMAN PLAYERS, may not reach into the field at any point during the match, including but not limited to when introducing HAY onto the field via the HAYBINE.

Violation: VERBAL WARNING. YELLOW CARD if subsequent violations during the event.

G102 *Don't cross the fence! A team member may only enter or exit the FIELD through open gates and only enter if FIELD lighting (FIELD facing side of the team signs and timers) is green, unless explicitly instructed by a REFEREE or an HTA (Howdy Technical Assistant).

Violation: VERBAL WARNING. YELLOW CARD if subsequent violations during the event.

G103 *Don't mess with Old McMarchman's farm! A team member is prohibited from the following actions with regards to interaction with ARENA elements. A. climbing on or inside, B. hanging from, C. manipulating such that it doesn't return to its original shape without human intervention, and D. damaging.

Violation: VERBAL WARNING. YELLOW CARD if subsequent violations during the event.

Conduct

G201 *Be a good person. All teams must be civil toward everyone and respectful of team and event equipment while at HAY HARVEST

Violation: VERBAL WARNING. YELLOW CARD if subsequent violations during the event.

G203 *Asking other teams to throw a MATCH – not cool.

Violation: YELLOW CARD. RED CARD if subsequent violations during the event.

G204 *Letting someone coerce you into throwing a MATCH – also not cool.

Violation: YELLOW CARD. RED CARD if subsequent violations during the event.

G205 *Throwing your own MATCH is bad.

Violation: YELLOW CARD. RED CARD if subsequent violations during the event.

G206 *Don't violate rules for RPs.

Violation: YELLOW CARD and the ALLIANCE is ineligible for the BONUS RPs.

G208 *Show up to your Qualification MATCHES. If a ROBOT has passed initial, complete inspection, at least 1 member of its DRIVE TEAM must report to the ARENA and participate in each of their assigned Qualification MATCHES.

Violation: DISQUALIFIED from the current MATCH.

G209 *Keep your ROBOT together. A ROBOT may not INTENTIONALLY detach or leave a part on the FIELD.

Violation: RED CARD

G210 *Don't expect to gain by doing others harm.

Violation: MAJOR FOUL. YELLOW CARD if REPEATED.

G211 *Egregious or exceptional violations. Egregious behavior beyond what is listed in the rules or subsequent violations of any rule or procedure during the event is prohibited.

Violation: YELLOW or RED CARD.

G212 *All teams can play. A team may not encourage another team to exclude their ROBOT or be BYPASSED from a qualification MATCH for any reason.

Violation: YELLOW CARD. RED CARD if the ROBOT does not participate in the MATCH.

Excluded rules include; G104, G202, and G207, for being irrelevant to HAY HARVEST. Additional Information can be read [here](#).

ROBOT Construction Rules

Rules of the game as they apply to the construction ROBOT are described below. Note that only rules specific to HAY HARVEST are listed. Basic ROBOT construction rules found in the 2026 Game Manual also apply (i.e. safety, BUMPERS, MOTORS, etc.).

R102: ROBOTS may not extend such that their total height exceeds 36.0in (91.44cm).

R103: ROBOTS may not weigh more than 115 pounds including bumpers (not including batteries).

R104: TEAMS will be limited to the number of motors / motor controllers allocated to them by the mentors (CIMS, Mini-CIMS, 775's; 14 motor controllers).

The motor list mentioned above is NOT official and will be communicated by the respective TEAM's mentors. The motor controller count IS official.

R105: ROBOTS may not extend more than 20in (50.8cm) beyond the vertical projection of their ROBOT PERIMETER.

R106: In the STARTING CONFIGURATION (the physical configuration in which a ROBOT starts a MATCH), no part of the ROBOT shall extend outside the vertical projection of the ROBOT PERIMETER, with the exception of its BUMPERS and minor protrusions such as bolt heads, fastener ends, rivets, cable ties, etc.

R107: Don't make modifications to your drivebase. The ROBOT drivebase assigned to a team shall not be modified. Minor modifications such as adding mounting holes for mechanisms are an exception to this rule.

Teams are recommended to be extremely careful when modifying their drivebase and to check with their MENTORS if in doubt.

Tournament Play

QUALIFICATION MATCHES

During qualification MATCHES, 4 ALLIANCES of 2 ROBOTS each will be selected such that each TEAM plays 6 qualification MATCHES (totalling 12 qualification MATCHES).

PLAYOFF TOURNAMENT

At the end of qualification play, ROBOTS will be ranked based on total ranking points. If needed, ordered tie-breakers are as follows:

- 1) Total points scored
- 2) Total autonomous points scored

3) Most innovative ROBOT, as determined by the mentors

The HAY HARVEST alliance selection process will work exactly as a [normal alliance selection](#) process does, the only difference being alliances will be complete with two teams, not three.

The FOUR ALLIANCES will play in a round robin tournament to determine the HAY HARVEST Champion. Time permitting, the top two alliances at the end of the round robin will play in a best of three finals series to determine the HAY HARVEST champion! If time doesn't allow for a finals series, the top alliance after the round robin matches are complete is the HAY HARVEST Champion!

The finals series is the default end to the round robin tournament and only if significantly pressed for time during the event will we revert to the top alliance winning the event. This will be announced during the event.

Sound Effects

Event	Sound Effect
MATCH Start	Cavalry Charge
AUTO Ends	Buzzer
TELEOP begins	Rooster Call
Final ** Seconds	Dinner Bell
MATCH End	Moo
MATCH Stopped	Foghorns

Team Update 1

MATCH Play

SCORING

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POINT VALUES

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