



# Kickoff Weekend Schedule

## Kickoff Broadcast

Watch the game reveal!

## Kickoff Broadcast Q/A and Rules Test

Read all of the rules. Rules test will be announced when ready. Do not move to the next section until you have passed the rules test.

## Game Review Questions

Complete the following questions individually or with other tablemates who have passed the rules test. Try to have answers to all of these questions before lunch is over.

1. List all “types” of game elements in the game. How many of each “type” of game element are in a single match? Are any in any protected zones so that only 1 alliance can use them?

Element	Quantity	Auto score			Teleop (Link = +5)		
		low	mid	high	low	mid	high
Cones	54	3	4	6	2	3	5
Cubes	44	3	4	6	2	3	5
Charge Station	2 (1 per alliance)	auto			tele		
		D&E		D	D&E		D
		12		8	10		6
April Tags	8						

2. List all possible ways to score points (besides FOUL points)List all possible ways to score points (besides FOUL points)

Stage (auto, teleop, end game)	Action	Value (pts and RP)	Pros	Cons
Auto	Scoring game piece low	3	Easy Needs to be done for maximum score	Low point value Limited number of spaces

auto	Scoring game piece mid	4	Mid point value	Significant difficulty bump
auto	Scoring game piece high	6	Similar difficulty as mid Highest point value	Difficult Needs precision
auto	Moving outside the community zone	3		
auto	Balancing on charge station (Engaged)	12 (one robot only) (+1 RP if at LEAST 26 <b>TOTAL</b> charge station points scored)		
auto	Balancing on charge station (Not Engaged)	8 (one robot only)		
teleop	Scoring game piece low	2	Easy Needs to be done for maximum score	Low point value Limited number of spaces
teleop	Scoring game piece mid	3	Mid point value  More scoring opportunity for cones	Significant difficulty bump
teleop	Scoring game piece high	5	Similar difficulty as mid Highest point value	Difficult Needs precision
teleop	Scoring "links" - 3 game pieces in a line	5 points / link		
End Game	Balancing on Charge Station Not Engaged	6 (+1 RP if at LEAST 26 <b>TOTAL</b> charge station points scored)		
End Game	Balancing on	10		



	Charge Station Engaged	(+1 RP if at LEAST 26 <b>TOTAL</b> charge station points scored)		
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3. Are there any important size/height limits or appendage constraints?

**Starting max height: 4'6"**

**Max height: 6'6"**

**Max extension from frame perimeter: 48" \*only one direction at a time**

**Frame perimeter: 120"**

4. Calculate the theoretical maximum score of an alliance

**193 points**

7 top row game pieces scored in auto: 42 pts

3 top row game pieces in tele: 10 pts

9 middle row in tele (6 cones, 3 cubes): 27 pts

9 hybrid: 18 pts

9 links in total: 45 pts

Docked AND Engaged during AUTO (1 bot only): 12 pts

Moving outside community zone (3 bots): 9 pts

Docked AND Engaged during Teleop (3 bots): 30 pts

***If a game piece scored during auto is removed from the node the points from auto are removed; if that piece is restored on that node, the points from auto are restored***

5. List all (if any) possible ways to de-score points (besides FOUL points). I.e, what are the ways you can remove points from the opposing alliance?
- There are no opportunities to de-score points
6. Which FOULS does your table think will be the most influential, and why?



Penalty	Description
<b>FOUL</b>	a credit of 5 points towards the opponent's MATCH point total
<b>TECH FOUL</b>	a credit of 12 points toward the opponent's MATCH point total
<b>YELLOW CARD</b>	a warning issued by the Head REFEREE for egregious ROBOT or team member behavior or rule violations. A subsequent YELLOW CARD within the same tournament phase results in a RED CARD.
<b>RED CARD</b>	a penalty assessed for egregious ROBOT or team member behavior or rule violations which results in a team being DISQUALIFIED for the MATCH.
<b>DISABLED</b>	the state in which a ROBOT is commanded to deactivate all outputs, rendering the ROBOT inoperable for the remainder of the MATCH.
<b>DISQUALIFIED</b>	the state of a team in which they receive 0 MATCH points and 0 Ranking Points in a Qualification MATCH or causes their ALLIANCE to receive 0 MATCH points in a Playoff MATCH

Foul #	Penalty	Description	Reason
G109	Foul, Tech foul if it leads to scoring a game piece,	The Robot can't extend it's frame perimeter in more than one direction	Prevents designs like the 254's bot from last year.  We have to collect cones from a single side of the bot
G207	Foul per instance	Right of Way.  The robot can't make contact with the opponent robot within the Loading Zone or Community	Very important rule for the driver to be aware of.
G208	Tech Foul per instance	Don't climb on each other unless in the Community	Opens the possibility of buddy climb
G202	Foul plus Tech foul per 5	A robot cannot pin against an opponent robot for more than 5 seconds.	It would be unfair, it prevents players from being pinned against



	seconds over		for the whole game.
G209	The robot touched counts as docked and engaged	A Robot can't interfere with another opponent robot touching their charge station.	This could interfere with the point system and could lead to further damage to robots by messing with their balance
G108	Foul, tech foul if repeated	Keep out of opponent zone	Robots may not reach over into
G403	Foul per game piece. If egregious, yellow card	Robots may not control more than 1 game piece at a time. Control is defined as a piece being fully supported by the robot or is intentionally pushing the game piece to a desired location	Driver needs to watch out to prevent fouls.
G203	Tech foul and tech foul for every 5 seconds not corrected	2 robots cannot collude to block off game elements	

7. Describe the ranking process in Qualification Matches. What factors impact a team's rank? If there are "ranking points" to sort teams, what are the tie breakers? In what order do the tie breakers apply?
8. Are there any possible "chokehold" strategies in this year's game?
  - a. A "chokehold" strategy is a strategy which, if implemented properly, will guarantee success in a given match, regardless of any action taken by the opposing alliance.
9. \*What are some ways the human player(s) can manipulate the game items?
  - a. What strategic advantages can be gained from human player actions?
10. \*List all possible things that could go wrong for our robot in a match. Be specific! What particular parts of the strategy, etc might go awry?
11. What is the best way(s) to play defense for this game? Why?
12. What does your team think is the best way to take advantage of the autonomous period? List some possible cycles
13. If there are multiple scoring elements or locations, what are the tradeoffs between those scoring objectives?
14. What is the tradeoff for the end game versus continuing to score/play defense? Does it require an additional mechanism? How fast do you need to be at the end game to make it worth doing? Do you think the end game is worth doing? Why?
15. What are the minimum skills a robot needs to get picked for eliminations?



- a. First Pick
- b. Second Pick

16. \***“What” can** the 599 robot do? List out **everything**

17. **“What” should** the 599 robot do? Please list out and justify each requirement of the 599 robot.

Task	Should 599 have the ability to do this?	Justification
Drive fast	yes	Faster cycles and more scoring
Vision (detect apriltags)	yes	Makes scoring easier; less human error
Intake game pieces (cubes & cones) from floor	yes	To score
Intake game pieces (cubes & cones) from hp station	yes	Most game pieces are there
Reorient game pieces	yes	To maximize time efficiency
Charging Station dock	yes	End Game, as simple as just driving onto the thing
Charging station engaged + docked (tele)	yes	Higher point value, RP, shouldn't be too difficult as demonstrated during kickoff
Score low (tele)	yes	Insurance that we are able to score any points; also make sure we can get links, if we want maximum points we need to be able to do all levels (RP ensured)
Score mid (tele)	yes	Ensures rp, higher point value
Score high (tele)	yes	More Points, similar difficulty to mid Easiest time to score pts
Score high (auto)	yes	Gets maximum amount of points possible
Autonomous: moving out the community	yes	Ensures points during auto; really easy
Auton score preload	yes	Easy, expected by alliance partners
Auton 2 (preload+1)	yes	Easy



Auton 3 (preload+2)	yes	Average competitive auton at normal levels of play
Auton 4 (preload+3)	no	Probably not enough time, other team(s) can also score; however is competitive and scores points
Auton 5 (preload+4)	no	how 2910 made a six ball auto in fifteen seconds yeah
Auton Alternate (getting onto the Charge Station)	maybe	8-12 points if we are able to dock on the station; contributes to the 26 points needed for RP

18. What additional comments/perspective would your table like to add to the discussion?

## Conceptual Design

Goal: Develop, on paper (provided), conceptual designs that meet some or all of the priority list requirements.

It's okay if your designs only solve some issues, they are a great starting point and can be discussed with other presented designs to lead into a final combined option.