6328 Kickoff Worksheet

2025: REEFSCAPE

Aim to answer the questions in order.

This is done to gain a fuller understanding of the game and ensure that full team discussions are effective and everyone can contribute. Try to think beyond the provided examples!

Each section has a recommended amount of time to serve as a guideline (not rules) for when to move on so that each question can be addressed in approximately 1 hour.

This worksheet took heavy inspiration from 2791's Kickoff Worksheet and 1678's Strategy Offseason Training.

The Field (5 minutes)

List all the zones of the field. What is special about this zone? How many of each are there? (ex: Alliance wing, etc.). Draw the field on paper (see the final page of this worksheet) or on a whiteboard.

- Barge (climb and score algae) 2x
- Coral source area (coral from human players) 4x
- Processor area (score algae) 2x
- Alliance area (drive team stands) 2x
- Reef Zone (score coral, remove algae) 2x

List all the major elements on the field. What is the purpose of each element? How many of each are there? Can you categorize these into groups of elements? (scoring, obstacles, human loading stations). Label these on your drawing.

- SCORING

    - REEF 2x
    - NET 1x
    - CAGE 6x
    - PROCESS AREA 2x
    - CORAL STATION
- OBSTACLES
    - 6 heavy cages in the way
- Human loading stations
    - 4 loading stations, on the same side as the scoring

The Gamepieces (7 minutes)

What are the two game pieces? How many can a robot hold simultaneously during autonomous and/or teleoperated phases? Draw them.

- Coral
- Algae
- You can hold one of each during both auto and tele

Where can a robot score game pieces? Does this change throughout the match? Are the two game pieces scored in different locations? Note these locations on your field drawing.

- Coral
    - 4 different levels of the reef
- Algae
    - Processor
    - Net

Where do robots get game pieces from? Mark this location on your drawing. Do robots start with any? How are the gamepieces introduced into the field? Are they placed on the field before autonomous?

- You start with 1 coral if you choose
- CORAL
    - Coral stations
    - Pre Staged

- Algae
    - Reef
    - Fall from missing the net
    - Pre staged

Points (15 minutes)

List all possible ways to score points (besides foul points). Describe how these scoring methods can lead to a Ranking Points (RP). If a scoring method changes value between phases, list those in the same row.

PHASE (Auto/Tele/Endgame)	**ACTION** (Short Description)	**VALUE** (Points and RP)
AUTO	Leave	3
Auto	L1	3
	L2	4
	L3	6
	L4	7
Tele	L1	2
	L2	3
	L3	4

	L4	5
AUTO/TELE	ALGAE in NET	4
AUTO/TELE	ALGAE in Processor	6
Endgame	Park	2
	shallow cage	6
	deep cage	12
Winning RP		3
AUto RP	move off the starting line, score one coral	1
Coral RP	score 5 on each level UNLESS you have CoOp, meaning you only need 3	1
Barge RP	Need 14 barge points	1

Are there restrictions on **where** you can score game pieces from?
(Ex: shooting limitations based on field lines in 2024)

- You can't throw the coral outside of the reef zone (G412)
- You can't roll the coral

Are there time restrictions on **when** certain tasks can physically be done?
(Ex: Height restrictions for mechanisms being extended during endgame, protected zones from opposing robots in 2024, throwing HIGH NOTES in 2024)

- Nothing says you 'CAN'T' climb in Auto but you wouldn't get points for it
- Can't throw algae during auto
- Can't touch opponents climbed in the last 20 seconds

Think of some ways you could prevent your opponent from scoring points.
(Ex: pushing opponents, blocking shots, picking up their game pieces)

- Block opponents from receiving from their coral station
- Block opponents from entering their reef zone
- Steal dropped game pieces at the end of auto
- Steal algae from opponent's reef
- Block opposing HP from throwing algae in the net
- Block opponents from entering your side of the field to score in your processor

Are there any actions that potentially get harder as the match progresses?
(Ex: Less scoring locations in 2023, fewer game pieces available)

- As you fill up the reef, scoring coral gets harder
- Piled coral in the trough makes scoring more harder
- Only 18 algae on the field (not reintroduced when scored)
- Once the cages are being climbed on you can't get to the processor
- People can bump you if you climb early
- Debris around the reef (unscored game elements)
- Removing algae makes scoring coral easier

Penalties (7 minutes)

How many points is a foul? What about a major foul?

- Minor Foul: 2 pts
- Major foul: 6 pts

What do a yellow card and a red card do? List some ways they can be given.

- Yellow card: bad robot/human actions (eg arguing with the ref)
- Red card: 2 yellow cards turn into a red card, egregious robot/team member rule violations and result in being disqualified from the match

List what you believe are going to be the most common / influential penalties (fouls/tech fouls) in this game. Aim for 3-5 answers.

Foul # (ex: G20)	**Description**	**Reason**
G428	Hitting opponent's cage	Trying to take a fast route across the field
G409	Controlling >1 gamepiece	Happens normally/accidentally
G425	Pinning	Happens during defense
G415	Extension outside of frame perimeter	If anything breaks
G421	Two robots in opponent's zone	Poor planning of defense or getting hit into opponent's space
G427	Zone protection in reef/barge	Poor defense

G422/423/424	No tipping/contact with other teams in their frame perimeter	Poor defense
G418/G405	Touching cage in tele/auto	
G426	Don't block processors	

Ranking Points (RP) (5 minutes)

Describe the Ranking System for this year. If there are Ranking Points, how do you get them?

- 6 RPs total
  - Winning is 3 RP
  - Tieing is 1 RP
  - Barge is 1 RP for scoring 14+ pts in the Barge
  - Coral is 1 RP for scoring 5 on each level unless there is coopertition which only needs 5 on 3 of the levels
  - Auto is 1 RP for all 3 robots leaving, and at least 1 coral is scored

Do any Rank Points **require** more than one robot to accomplish? How do they happen?
(Ex: Climb RP 2018-2022, endgame RP for STAGE 2024)

- Barge
- Auto (if >1 robot is enabled)

Autonomous Strategies (7 minutes)

Where can robots start on the field? Where can they score? Label this on your field.

- Anywhere along the starting line
- Can only shoot coral from within the reef zone, all other scoring is open

How can the actions in one phase (auto, teleop, endgame) impact your alliance or the opposing alliance in another phase?
(Ex: overflowing opponent's loading station in auto in 2020, stealing all the centerline NOTEs in 2024)

- Cages can make it harder to traverse the field generally, but especially when people are climbed or if they are all deep
- Can us all your algae early and not have any in the end game

How can multiple robots work together in auto? (Feel free to draw this)

- Everybody leaves and teams drop their coral for another partner to score
- Focusing on different gamepieces
- Agreeing on starting positions

Teleoperated Strategies (12 minutes)

Are there ways for alliances to work together in a match, as opposed to each robot working independently? Do these seem viable?
(Ex: one robot scoring cubes, the other scoring cones in 2023, passing notes in 2024)

- Ferrying
- Playing defense on the opposing alliance (2O, 1D)
- Different robots focus on each element
- Counter defense to protect your best scorer
- Protecting your coral station

Are there any places on the field that are particularly vulnerable to defense?
(Ex: HANGAR in 2022, Opponent's STAGE or SOURCE in 2024)

- The Barge zone in the end game/in general, if you bump into it you give opponents points
- Coral loading zone
- Reef zone (towards the end/ in general)
- Processor (no protected zone)

Is it possible to score from any protected areas, where opponents are not allowed to touch you? Are these zones protected during all times?
(Ex: COMMUNITY in 2023, PODIUM in 2024)

- *The reef*
- *The barge*

Can the human player(s) affect gameplay and strategy?

- Can roll the coral all the way to the reef zone
- Missing an algae in the net helps the opposing team
- Hoarding algae

Match / Gameplay Strategies

Are there opportunities for coopertition? If so, how is it achieved and how does it benefit an alliance?

- Scoring in the processor twice with both alliance gives a co op point and lowers the coral RP threshold
-

List at least one insight into this game that you think your peers may have glanced over. Describe in detail and be prepared to share.

- Use game pieces to climb because the robot can be transitively supported as long as it is grabbing onto the cage
- L4 is only a 1 pt difference from L3, takes more time and rotation to score
- ~~g421 means you cant score in the processor and play defense at the same time with two different robots~~
- 6.5.2 indicates you can have two robots touching and climb if both are contacting cages
- scoring in opponent processor to force coopertition
- pushing algae inside the reef as opposed to fully descoring it
- keeping possession of the algae can be important for higher scoring events
- taking algae from opponent's reef as long as you don't draw a penalty
- drive coach communication is important due to all of the strategies/constrained space
- Want to carefully stack coral in the trough due to finite space on higher levels
- scoring coral on L4 in Auto means you have more time to do it

Use the remaining space as a brainstorm area for any leftover ideas. Be creative!
(Ex: "outside the box" game strategies like skipping a climb level in 2022, how a cycle would look like, etc.)

"What" Can We Do?

- Drive
- Leave
- Score Coral on L1 (trough)
- Score Coral on L2
- Score Coral on L3
- Score Coral on L4
- Score Algae in the net
    - Shooting vs Placing
- Score Algae in the processor
- Endgame
    - Climb the Deep Cage
    - Climb the Shallow Cage
    - Buddy Climb
- Pickup
    - Pickup from the Coral Station
    - Pickup from the ground in any orientation
    - Pickup Coral from the auto Marks (vertical)
    - Pickup Algae & Coral from the auto Marks
    - Pickup Algae from the auto marks without disturbing coral
    - Pickup Algae from the floor
    - Remove Algae from anywhere on the Reef
    - Intake opposite from scoring side
- Play Defense
- Drive under the shallow cages
- Counter Defense
- Steal Coral

- Auto Align to the April Tags
    - Reef
- Park in the Barge
- Ground Passing Algae
- Score the Preloaded Coral on the Reef
- Ferrying Algae
    - Shooting
- Delivering Coral
- Holding one of each at the same time
- Stack Coral in the trough
- Reach in and grab from internal reef
- Steal Algae from opponents reef
- Push Algae through the reef
- Blocking shots
- Removing Algae while scoring Coral
- Right itself after being tipped
- Light up to signal robot actions
- Coral intake opposite to coral end effector

Roles discussed in kickoff groups:

- Red:
    - Specialize in Coral,
    - receive from Station,
    - Placing on all 4 levels,
    - Removing Algae (without shooting/processor),
    - Deep Cage Climb,
- Orange:
    - Scoring L1-L3 with priority high,
    - Deep Cage Climb
- Yellow:
    - Deep Cage Climb,
    - Pickup Algae from floor,
    - Pickup Coral from Ground
- Green:

    - Good Offense
    - L1-L3
    - Score in Processor
    - Pickup Algae from reef and floor
    - Climb deep Cage
    - Traverse Barge Zone
    - Hold Both Game Pieces
    - Intake coral from floor in any orientations
- Blue:
    - Specializing in Coral
    - L1 - L3
    - Score in Processor
    - Knock Algae off Reef
- Purple:
    - Get all RP independently
    - L1 - L3
    - Algae in Processor
    - Climb Deep Cage

Needs

- Drive
- Climb Deep Cage
- Score on Level 1
- Score on Level 2
- Score on Level 3
- Floor Pickup Algae
- Removing Algae from Reef
- Auto Aligning with the April Tags
- Score Algae in the Processor
- Automated Paths for Scoring on Reef Levels
- Holding both game pieces at once*
- Floor Pickup Coral - Laying Down (any orientation)*
- Floor Pickup Coral - Auto Mark Vertical*

Wants

- **SCORE ON LEVEL 4***

- Stacking Coral in the Trough (L1)*
- Picking off Algae from Reef*
- Driving under barge reliably
- Station Pickup Coral*

Nice to Haves

- Drive under Shallow Cage
- Scoring Algae in the Net*
- Ferrying Algae - Shooting or Rolling

Need	Want	Nice to Have
• Drive • Climb Deep Cage • Score on Level 1 • Score on Level 2 • Score on Level 3 • Floor Pickup Algae • Removing Algae from Reef • Auto Aligning with the April Tags • Score Algae in the Processor • Automated Paths for Scoring on Reef Levels • Holding both game pieces at once* • Floor Pickup Coral - Laying Down (any orientation)* • Floor Pickup Coral - Auto Mark Vertical*	• **SCORE ON LEVEL 4*** • Stacking Coral in the Trough (L1)* • Picking off Algae from Reef* • Driving under barge reliably • Station Pickup Coral*	• Drive under Shallow Cage • Scoring Algae in the Net* • Ferrying Algae - Shooting or Rolling

Updated:

Need	Want	Nice to Have
• Drive • Climb Deep Cage • Score on Level 1 • Score on Level 2 • Score on Level 3 • Score on Level 4 • Floor Pickup Algae • Removing Algae from Reef • Auto Aligning with the April Tags • Score Algae in the Processor • Automated Paths for Scoring on Reef Levels • Holding both game pieces at once • Scoring Algae in the Net • Station pickup Coral • Picking up and owning Algae from Reef • Pickup, score Coral on opposite sides • Score Coral while holding Algae	• Drive under Barge reliably • Put Algae in center of Reef	• Drive under Shallow Cage • Floor pickup Coral (laying down and vertical) • Stacking Coral in Trough (L1) • Ferrying Algae - Shooting or Rolling