

ROBOGAMES

CATEGORY

SELECTION STAGE RULES

BAKU 2025

RoboGames Qualifying Round Rules

Only registered teams that own a Spike Prime Set (45678), EV3 Core Set (45544), or LEGO® MINDSTORMS Robot Inventor (51515) robot set are eligible to participate in the qualifying round.

1. The qualifying round is open to middle school students aged between 10 and 16 (minimum age 10, maximum age 16). Each team must consist of one adult mentor (at least 18 years old) and 2–3 students (minimum 2, maximum 3).
2. To participate in the qualifying round, teams must have one of the following robot sets: Spike Prime Set (45678), EV3 Core Set (45544), or LEGO® MINDSTORMS Robot Inventor (51515). Any one of these three sets may be used.
3. The organizer does not provide any robot kits or competition fields to the participating teams.
4. Teams must supply their own robots and any other necessary equipment.
5. The qualifying round will take place after the registration period ends.
6. The teams with the highest scores in the qualifying round will earn the right to participate in the final round.
7. Information about the date and location of the qualifying round will be shared with participants after registration is complete and will also be posted on the official social media accounts of the festival.
8. Participating teams are deemed to have accepted all the conditions stated in the rules and any changes made by the SAF-2025 Scientific Committee.

RoboGames Competition Rules

1. The qualifying round will be organized in accordance with the rules of the FIRST® LEGO® League Challenge – *Submerged* robot game.
2. Each team will have 3 competition attempts. The highest-scoring attempt will be considered as the main result.
3. Each attempt will last 150 seconds.
4. The team that scores the most points in the shortest amount of time will be declared the winner.
5. If two or more teams achieve the same score, their other attempt scores and the time taken to reach the result will be considered.
6. Registered teams may visit active STEAM Centers for preparation by scheduling a specific day and time in advance.

The Robot Game

Here's a general overview of how the *FIRST*® LEGO® League robot game is played:

1. Your team works together to design and build a LEGO® robot. The robot operates autonomously, meaning that it will follow pre-programmed instructions that your team writes to complete missions on the robot game field. The goal is to earn as many points as possible within a 2.5-minute match.
2. During a match, your team earns points as your robot completes missions, or tasks. Missions are represented by LEGO® models, referred to as mission models, that are positioned around the field. Missions can challenge the robot to manipulate objects, activate mechanisms, or move items to designated areas.
3. Your team launches your robot from one of the launch areas, contained in home. The robot should be programmed and prepared with the necessary attachments to accomplish the mission(s) your team is attempting.
4. It's your job to strategize and determine the order and approach your team will use to complete missions and maximize your score. You may choose to focus on specific high-scoring missions or aim for a combination of missions to accumulate points.
5. Mission requirements must be visible at the end of the match to score, unless otherwise stated in the mission.
6. In competitions, you will have three matches to show what your robot can do. Each round offers an opportunity to improve your score and your strategies. Only your team's best score of the three official matches counts toward awards and advancement. Ties are broken using second and third best scores.
7. *FIRST* LEGO League cares about not only the robot's performance but also how you express Core Values through *Gracious Professionalism*®. Referees at the event will evaluate your *Gracious Professionalism* at every official match.

For a full understanding of the robot game, please review the robot game rules found at the end of this guide.



SUBMERGEDSM

Get ready to dive deep into the oceanic abyss, as this year's robot game will take you through a thrilling adventure of varying habitats found in different ocean layers. Starting from the sunlight zone, your team will plunge headfirst into a coral reef that is in dire need of restoration. As you venture farther down into the twilight and midnight zones, you'll retrieve an artifact from a sunken ship, which will surely put your skills to the test.

The real challenge awaits you in the deepest trenches of the abyss where you'll explore a mysterious cold seep. Finally, you'll return to the twilight zone to further your research and uncover the secrets lurking beneath the ocean's surface. Get ready to embark on an unforgettable journey of discovery!

Inside the Challenge Set

Inside your annual challenge set, you will find a challenge mat, 3M™ Dual Lock™ Reclosable Fastener, and your team's mission models. The

mission models will come in numbered bags and must be built by your team using the Mission Model Building Instructions.



Caution: The robot interacts with mission models on the field for points, so it is important to build the models exactly as shown in the building instructions. Practicing with incorrect models can be problematic and affect your gameplay experience. Work as a team to build the models and check each other's work as you build.

Use the link on the next page to begin building your mission models.



GETTING STARTED | HELPFUL LINKS

1. Build your mission models using the **Mission Model Building Instructions**. The mission models are the official objects the robot interacts with as part of the game.
2. Decide whether to put your field mat on a table or on the floor. You can use the **Optional Table Building Instructions** to build your own table.
3. Set up your field by following the **Field Setup Video**.
4. Read the Missions and Rules sections of this guide, found on the following pages, and watch the **Robot Game Mission Video**.
5. Check for **Updates**. This is a running list of official rules, clarifications, and amendments. Refer to the Updates often and carefully.
6. Track your score throughout the season using the **Official Scoring Calculator**.
7. Check out our other helpful resources, such as the **Event Preparation Video**, the **Robot Path Diagram**, and the **Classroom Scoresheet**!

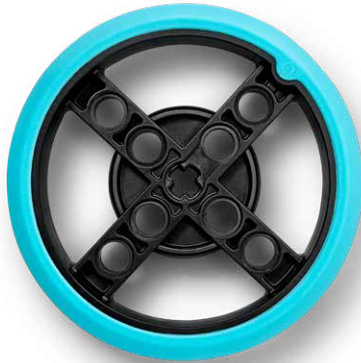
The Missions section describes each mission model and how your team can earn points during the game by interacting with them.

The Rules section describes how to play the game, including how a match is run, what a team can and cannot do, and how to score!

For additional help building and coding your robot, check out the LEGO® Education SPIKE™ App. Within the app, a guided mission is provided, where you will learn how to program and complete Mission 10: “Send over the Submersible”.



Scan the QR code to access the bold resources listed above.



Missions

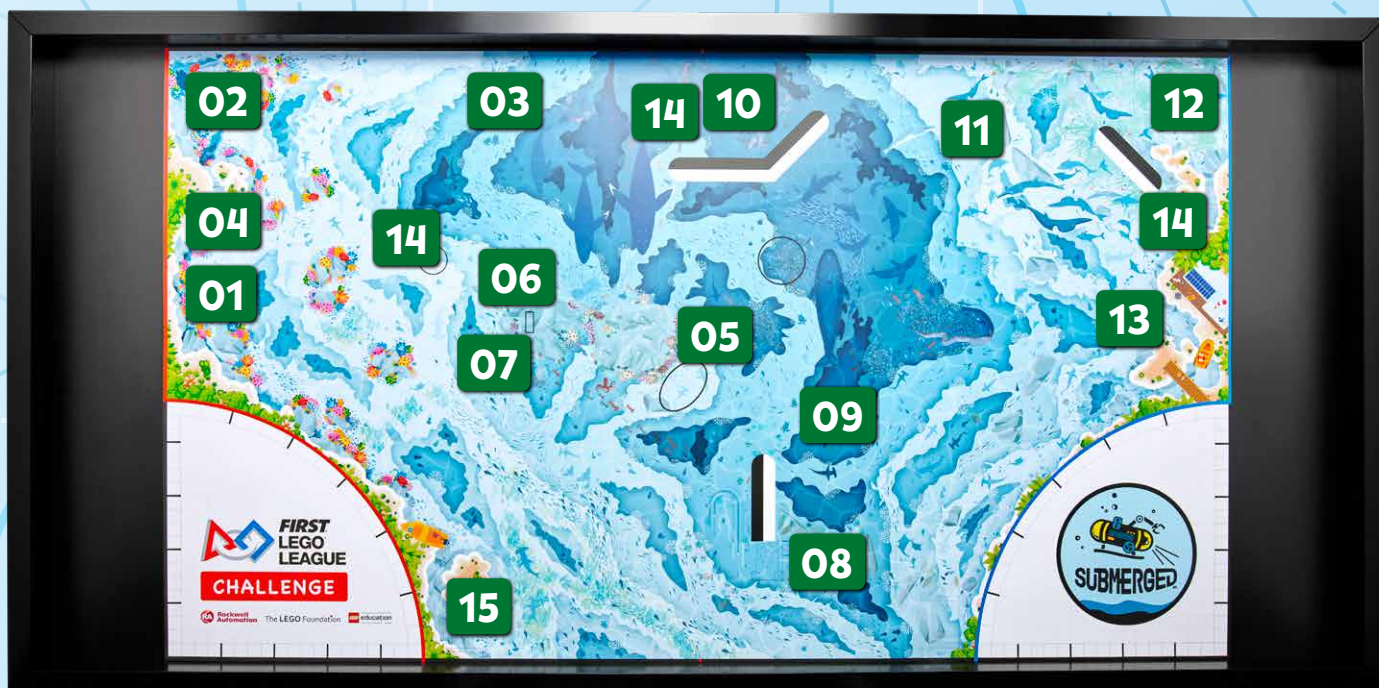
Watch the
Mission Video
here!



Rev. 1

ARE YOU READY TO PLAY THE SUBMERGEDSM ROBOT GAME?!

Complete as many missions as you can to score points! The missions are explained here.



No Equipment Constraint:

When this symbol appears in the top-right corner of a mission, the following constraint is applied:

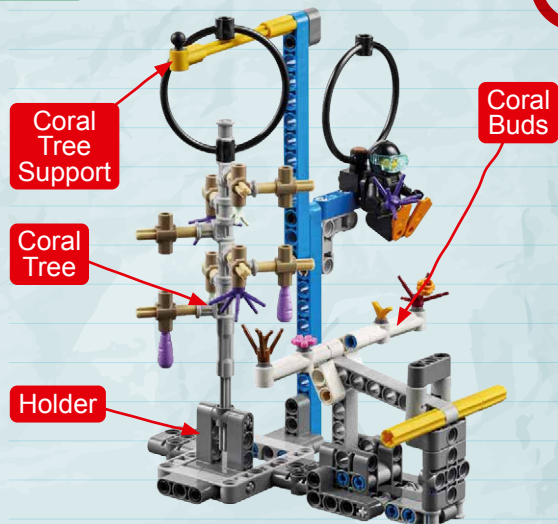
"No equipment may be touching any part of this mission model at the end of the match to score for this mission."

Equipment Inspection

- Before the match, there will be an equipment inspection. If your robot and all equipment fit completely in one launch area and under a height limit of 12 in. (305 mm) during this inspection

20

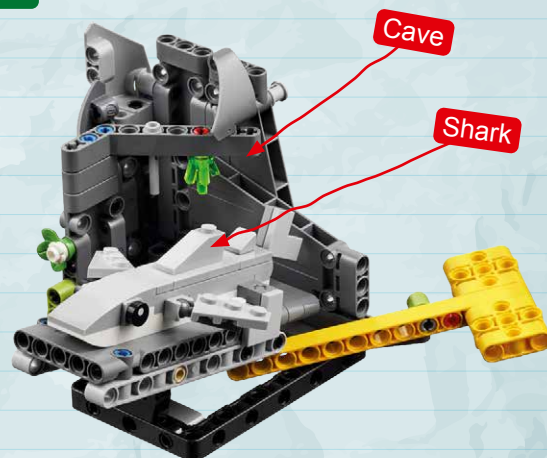
01 Coral Nursery



Secure new coral structures to grow in the nursery until they are strong enough for transport to the reef.

- If the coral tree is hanging on the coral tree support **20**
 - **Bonus:** and the bottom of the coral tree is in its holder **10 added**
- If the coral buds are flipped up **20**

02 Shark



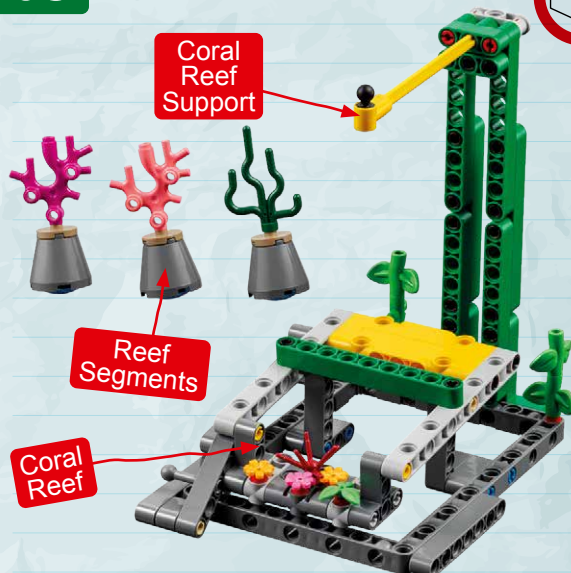
The shark was just tagged for research - release it back into its habitat.

Shark Habitat



- If the shark is no longer touching the cave **20**
- If the shark is touching the mat and is at least partly in the shark habitat **10**

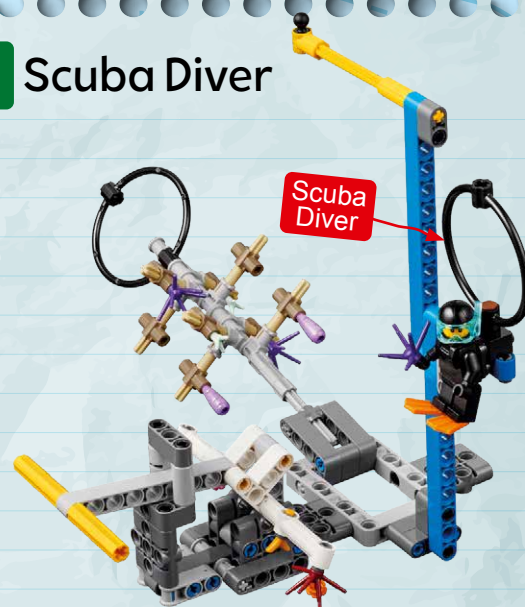
03 Coral Reef



Carefully mount the new coral structure without damaging other nearby reef segments.

- If the coral reef is flipped up, not touching the mat **20**
- If a reef segment is standing upright, outside of home, and touching the mat **5 each**

04 Scuba Diver

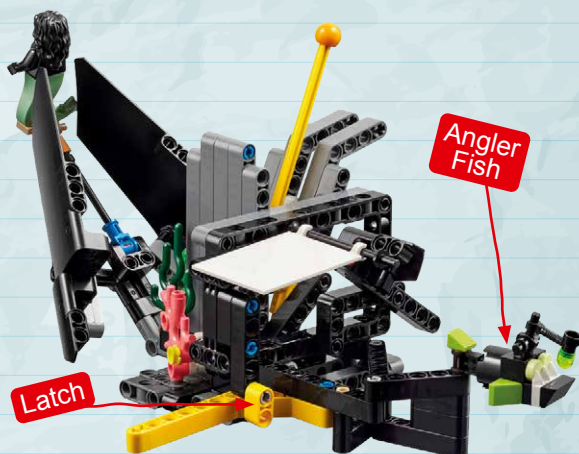


Help the scuba diver transport new coral from the nursery to the reef.

- If the scuba diver is no longer touching the coral nursery **20**
- If the scuba diver is hanging on the coral reef support **20**

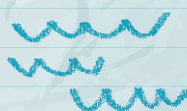
The "coral nursery" includes any part of the Mission 1 mission model.

05 Angler Fish

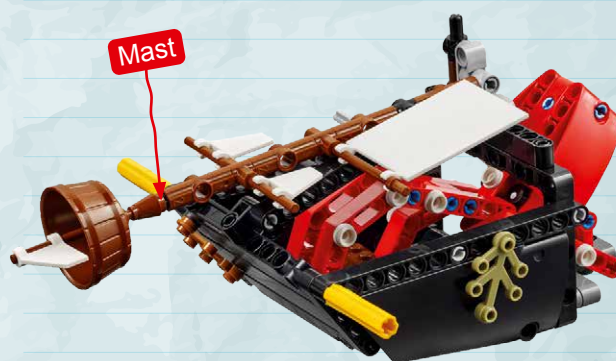


Guide the angler fish back to its unexpected home within the shipwreck.

- If the angler fish is latched within the shipwreck **30**



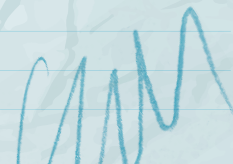
06 Raise the Mast



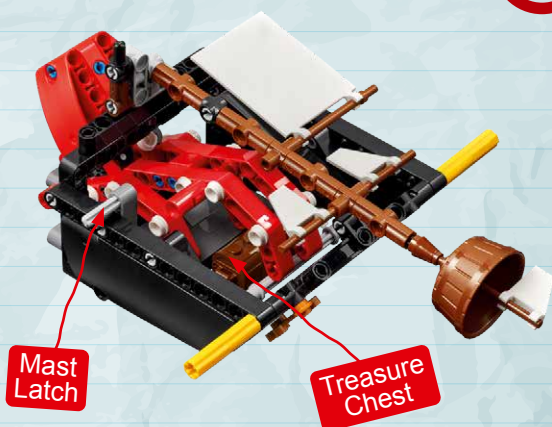
Raise the mast to restore the sunken shipwreck and explore what is inside.

- If the shipwreck's mast is completely raised **30**

The shipwreck's mast is considered raised when the latch prevents it from returning to its starting position.



07 Kraken's Treasure



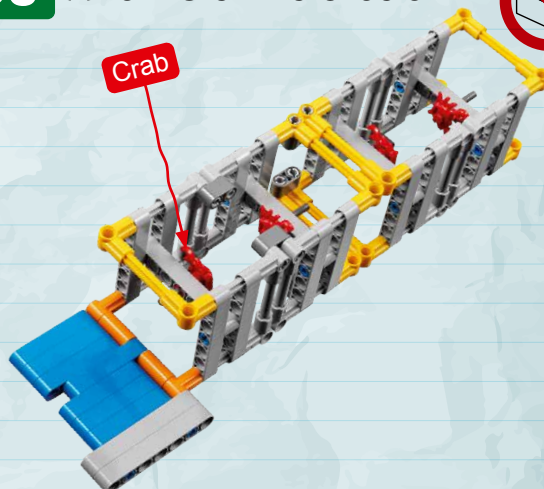
Retrieve the chest from the shipwreck to reveal the history and treasure it holds.

- If the treasure chest is completely outside the kraken's nest **20**



Kraken's Nest

08 Artificial Habitat

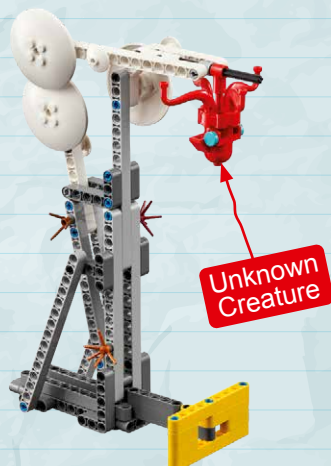


Rearrange the artificial habitat stacks to create safe homes for the crabs and other sea creatures in this area.

- If an artificial habitat stack segment is completely flat and upright **10 each**

There are four segments of the artificial habitat stack, each defined by its yellow base. A segment is considered upright when the crab is above its yellow base.

09 Unexpected Encounter

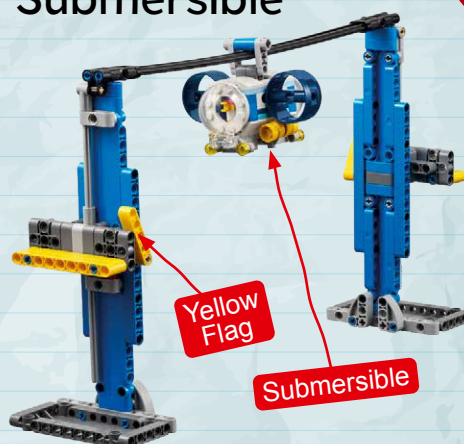


An unknown creature has attached itself to the AUV! Safely release it and deliver it to the cold seep.

Cold Seep

- If the unknown creature is released 20
- If the unknown creature is at least partly in the cold seep 10

10 Send over the Submersible

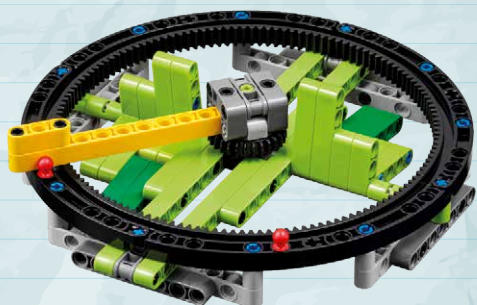


Some waters are too difficult to reach with larger ships. Send the submersible to explore the opposing field's waters.

- If your team's yellow flag is down 30
- If the submersible is clearly closer to the opposing field 10

*Teams may not block the opposing team.
It is not possible to earn the bonus in remote competitions or if there is no opposing team.*

11 Sonar Discovery



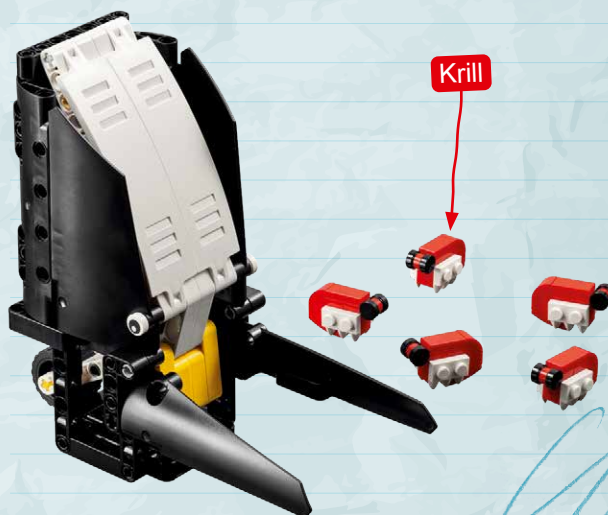
Whales



Use the ship's sonar technology to scan the surroundings for nearby objects or animals.

- If one whale is revealed 20
- **Bonus:** If both whales are revealed 10 added

12 Feed the Whale



Krill

Krill are a whale's favorite food! Collect the krill and feed them to the hungry whale.

- Krill at least partly in the whale's mouth 10 each

13 Change Shipping Lanes

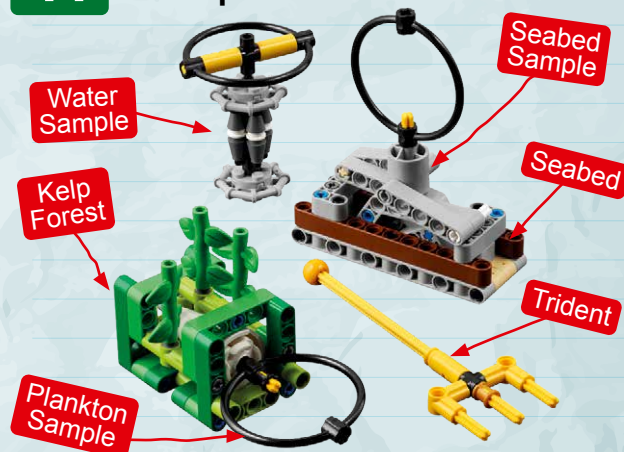


Adjust the cargo ship's route to safely avoid whale migration routes by moving to another shipping lane.

- If the ship is in the new shipping lane, touching the mat..... **20**



14 Sample Collection



Collect samples and artifacts from around the mat so they can be analyzed by scientists in the lab.

- If the water sample is completely outside the water sample area **5**
- If the seabed sample is no longer touching the seabed **10**
- If the plankton sample is no longer touching the kelp forest **10**

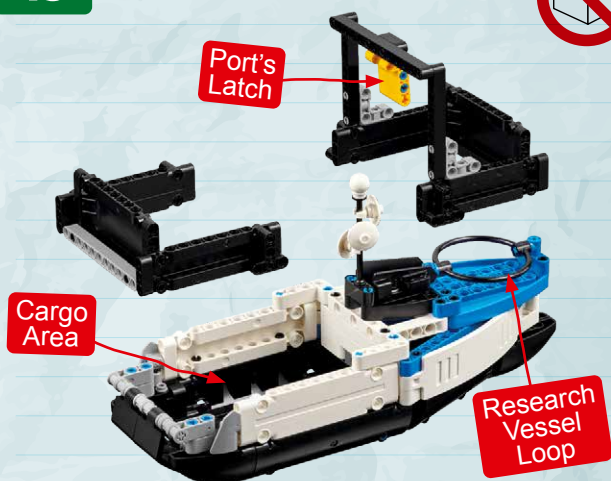
Water Sample Area



If a piece of the trident is no longer touching the shipwreck..... **20**

Bonus: If both pieces are no longer touching the shipwreck..... **10 added**

15 Research Vessel



Securely dock the ship that contains the samples and artifacts your team has collected.

If any of the following are at least partly in the research vessel's cargo area:

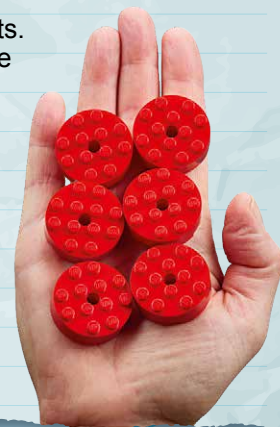
- Sample(s) **5 each**
- Trident Part(s) **5 each**
- Treasure Chest **5**
- If the port's latch is at least partly in the research vessel's loop **20**

Precision Tokens

You begin the match with six precision tokens worth 50 points. If you interrupt the robot outside of home, the referee will remove one token. You earn points for the number of tokens remaining at the end of the match. If the number remaining is:

(See Rules 17 and 18.)

**1: 10, 2: 15, 3: 25,
4: 35, 5: 50, 6: 50**



Rules



Updates



IMPORTANT!

- All robot game wording means precisely and only what it says. Don't overthink it!
- If a detail is not mentioned, it does not matter.
- If a situation arises that makes the referee's decision unclear or hard to call, you get the benefit of the doubt.
- If rules, missions, or the field setup needs adjustment or clarification, a Challenge Update will be issued during the season superseding previous materials. It's important to note that updates will apply only to events occurring after their release and should not be used to alter the results of past events.
- At an event, your head referee makes the final decision. Text always has authority over pictures. (Videos and emails have no authority when scoring.)



Gracious Professionalism[®] displayed at the robot game table

DEVELOPING	ACCOMPLISHED	EXCEEDS
<p><i>Gracious Professionalism</i> points will be added to the total Core Values score from judging. Every team starts each match with an ACCOMPLISHED score (3 points), and this is the score most matches will yield. The score</p>	<p>changes only if a referee observes above-and-beyond sportsmanship, awarding an EXCEEDS score (4 points), or lesser sportsmanship, awarding a DEVELOPING score (2 points).</p>	<p>If a team does not show up for their match, they will score no points for <i>Gracious Professionalism</i>. However, if a team arrives and does not run the robot but does explain what has happened, they can get a <i>Gracious Professionalism</i> score of 2, 3, or 4 points depending on the <i>Gracious Professionalism</i> they demonstrate.</p>

Glossary

- **Equipment:** Everything teams bring to the match. (See **Rules, Before the Match** for more details.)
- **Field:** This consists of the border walls and everything inside them. The mat, the mission models, and the home areas are all part of the field.
- **Interruption:** When technicians interact with the robot, or anything touching it, after launch.
- **Launch:** When technicians activate the robot from completely within a launch area to cause it to move autonomously.
- **Match:** The 2.5 minutes when the robot completes as many missions as possible to earn points.
- **Mission:** One or more tasks that can be completed for points. Teams may try missions in any order or combination.
- **Robot:** Your controller and any equipment combined with it and intended to not separate from it, unless by hand.
- **Technicians:** Team members standing at the table who are handling the robot during a match.

BEFORE THE MATCH | EQUIPMENT

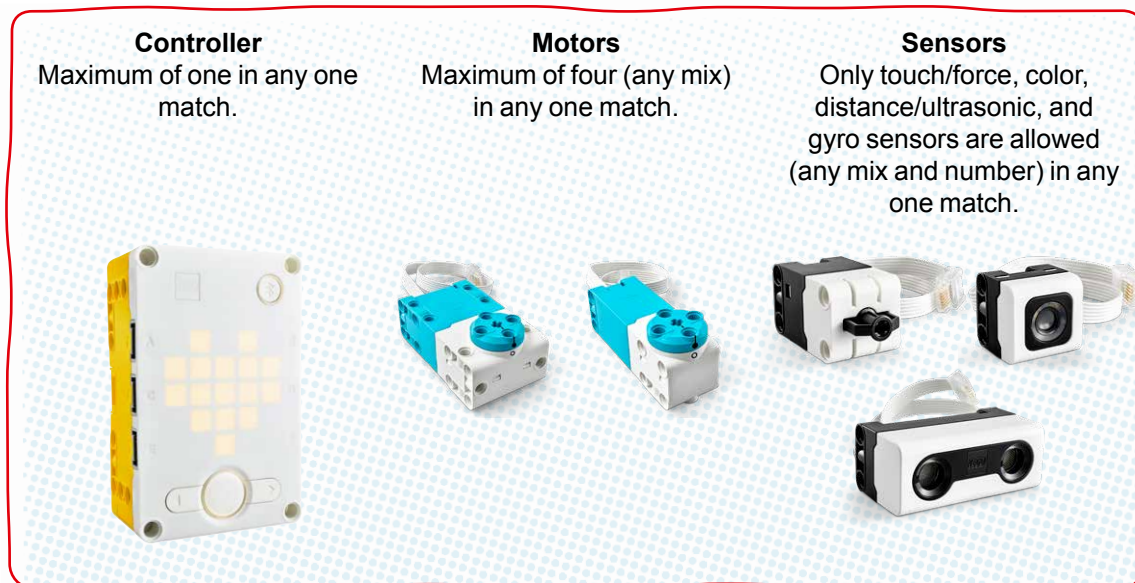
The equipment a team brings to the robot game field, such as the robot and its attachments or accessories, must meet the following guidelines:

1. All equipment must be LEGO® building pieces, in original factory condition.

Exception: LEGO string and pneumatic tubes may be cut to length.

2. Teams may use as many non-electric LEGO pieces from any set as they'd like.

3. Electric LEGO equipment is allowed only as described and shown below. (The LEGO® Education SPIKE™ Prime is shown, but LEGO® Education SPIKE™ Essential, MINDSTORMS® EV3, MINDSTORMS Robot Inventor, Powered Up, and equivalent NXT and RCX are also allowed.)

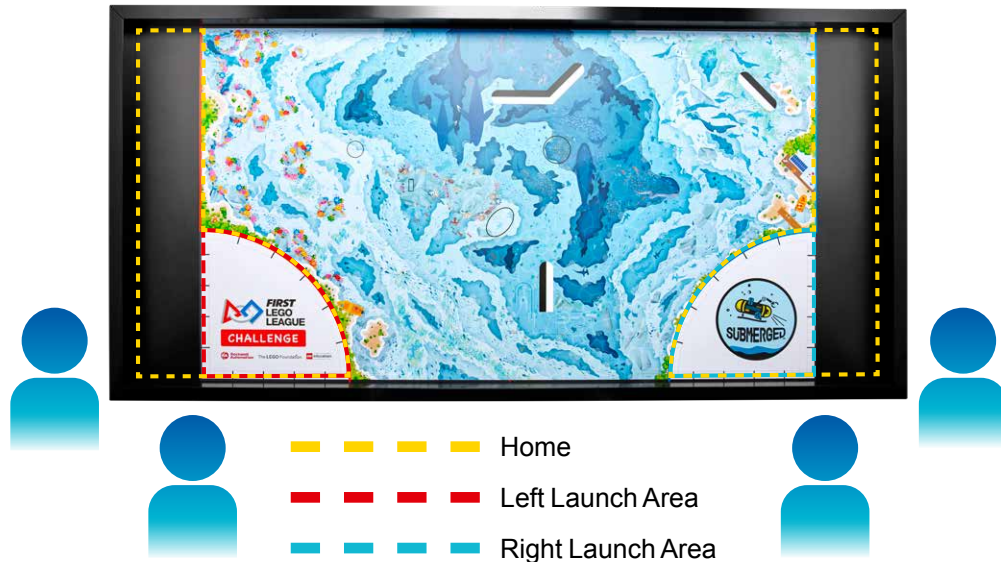


4. Teams can also use LEGO wires, one controller's power pack or six AA batteries, and one microSD card.

5. Teams can use any software or programming language. Robots must be autonomous during the match. No remote controllers of any type are allowed.

6. Teams may bring one sheet of notebook paper per home area for program notes. This does not count as equipment.

7. Additional or duplicate mission models are not allowed.



BEFORE THE MATCH | MATCH SETUP

At events, matches will be played on official tables. Before the match begins, teams will need to pass the pre-match inspection and set all their equipment in place.

8. All the team's equipment must fit into the two launch areas and fit under a height limit of 12 in. (305 mm). However, if the team can fit all their equipment into just one launch area under a height limit of 12 in. (305 mm), they will earn 20 points.
9. Teams will not be given additional storage space. Storage tables or trolleys are not allowed. Everything must stay on the table or in the hands of the technicians. The areas to the left and right of the mat can be used to store equipment and measure approximately 6.75 in. (171 mm) by 45 in. (1,143 mm) (actual measurements may vary). Equipment stored on the table may extend past the left and right walls only, as needed.
10. After the team has passed inspection, they will be given a couple of minutes to set up. They start by distributing their equipment and loose mission model(s) between the two home areas. (Sometimes, mission models must start in a specific home area. See **Field Setup** for more details.) Next, they place their robot into the launch area they wish to start from. Any remaining time should be used to adjust the robot and equipment for the first launch, to calibrate sensors using any part of the mat, and to ask the referee to check anything on the field.
11. Team members must then divide into two groups and position one group on each side of the field (left and right). These members cannot switch sides during the match. Teams of:
 - Four or more: Position two technicians at each home area. All other team members must stand back. Teams may never have more than two technicians at a single home area, but team members may swap places with technician(s) from the same side at any time.
 - Three: Position two technicians on one side and one on the other (team choice).
 - Two: Position one technician on each side.

DURING THE MATCH | INSIDE HOME

- 12.** Home is split into two areas. Each home area contains its own launch area.
- 13.** Technicians may use their hands on the robot, equipment, and mission models when these are completely within their home area.
- 14.** Technicians may not:
 - Hand anything from one home area to the other.
 - Touch anything outside of their home area, except for interrupting the robot.
 - Cause anything to move or extend outside this area, except for launching the robot.

Points scored in these ways will not count.

- 15.** When launching:
 - Technicians may not keep anything from moving.
 - The robot and anything it is about to move must fit completely inside the launch area.
- 16.** After any launch, technicians should allow the robot and anything it is in contact with to return completely into home before interrupting it.
(See **Rules, Outside Home** for more details.)



DURING THE MATCH | OUTSIDE HOME

- 17.** If technicians interrupt their robot, it must be relaunched. If the robot or anything it was in contact with at the time of the interruption was outside home (even partly), the team loses one precision token.

If the robot or any object(s) it was in contact with were:

- **Partly outside home:** They must be brought into that home area.
- **Completely outside home:** Teams may hand them to either home area.
 - Any returned object that was obtained outside home after the robot was last launched must be given to the referee for the remainder of the match.

Exception: If the team does not plan to launch again, they may stop their robot in place without losing a precision token. The robot and anything it is in contact with should remain in place where it was interrupted.



- 18.** If a piece of equipment or a mission model is dropped or left outside of home by the robot, wait for it to come to rest. If it rests:
- **Completely outside home:** It stays as is unless the robot moves it.
 - **Partly inside home:** It stays as is unless the robot moves it. Alternatively, at any time, the technicians may remove it by hand. If the object removed by hand is a mission model, it must be given to the referee for the remainder of the match. If the object is equipment, it must be taken into that home area, and the team will lose one precision token.
- 19.** Teams may not interrupt their robot in such a way that they earn points from it. Points scored in these ways will not count.
- 20.** Teams may not separate the Dual Lock, take models apart, or break a mission model. If a mission model is combined with anything (including the robot), the combination must be loose or simple enough that, if asked to, a technician could free the mission model in perfect original condition in a single motion. Points scored using combinations that fail this test will not count.
- 21.** Teams may not interfere with the opposing field or robot unless there is a mission exception. Points failed or lost due to interference will score automatically for the other team.

AFTER THE MATCH | SCORING

- 22.** After 2.5 minutes, the match ends. Technicians must stop their robot and touch nothing else. This is when scoring begins.
- 23.** For scoring, all mission requirements must be visible at the end of the match unless a method was required in the mission.
- 24.** When something is required to be “completely in” an area, the lines and airspace above that area count as “in” unless otherwise mentioned.
- 25.** If a team cannot run their robot, they can still gain *Gracious Professionalism*® points by explaining the situation or being present at the match.
- 26.** The referee will document the results of the match with the team. When there is agreement on the results, it becomes official. If no agreement is reached, the head referee makes the final decision. Only the team’s best score of the three official matches counts toward awards and advancement. Ties are broken using second and third best scores. In the case of a three-way tie, local tournament officials will decide what to do.



