

# 2024 General Ruleset

**make it**  
ASSOCIATION SANS BUT LUCRATIF

Author : M. Teusch – marc@makeit.lu  
Date/Version : Dec 8, 2023

## Table of Contents

Introduction.....	3
"make it" asbl.....	3
This document and its conventions.....	4
Participation rules.....	4
Teams.....	4
Registration.....	4
The competitions.....	5
"make it" Concept Trophy Ages 6 to 10.....	5
CTF Challenge Ages 10 to 14.....	5
VEX Challenge Ages 14 to 18.....	5
Common ruleset.....	6
General rules of behavior on the field.....	7
Flags / Posters.....	8
General game rules.....	9
The team booth.....	12

## Introduction

The LYRC is Luxembourg's only youth robotics tournament as of 2021. As such, "make it" wants to create a unique event giving the young population an overview of STEAM and its applications in practice.

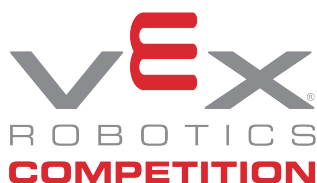
This guide will explain each competition and introduce the environment as well as the rules by which this competition will be established. As there will be some international guests, this guide will be held in English. However, "make it" proposes for certain competitions, Luxembourgish versions on their website <https://www.lyrc.lu>.

### **"make it" asbl**

"make it" a.s.b.l. (non profit) was created in April 2018 to support the maker movement with focus on Luxembourg and its surrounding areas. The main goal of this association is to help prepare young talents to be ready for the upcoming challenges by bringing them a safe environment where they can learn new skills, share their ideas and engage in social responsible ways with our world.

"make it" organizes a yearly national robotics challenge to ignite a passion for Science, Technology, Engineering, Arts and Mathematics (STEAM) among the many youths across Luxembourg. By bringing these future STEAM leaders together in an engaging and collaborative competition that drives home the importance, excitement, and applicability of STEAM education, "make it" inspires students to learn the skills they will need to make the discoveries their parents and grandparents would consider miracles, impossibilities, or just plain science fiction.

Together with this national challenge, "make it" plans these robot competitions in order to select teams able to represent the Grand Duchy of Luxembourg during international challenges, such as the VEX Worlds Competition, the FIRST Global Robotic competition or the WorldSkills Mobile Robotics Challenge.



As such, "make it" thrives to foster understanding and cooperation among the youth as they use their abilities to solve the world's problems. Participation in this challenge is about so much more than just robots. As participants learn to find solutions to the world's grand challenges – water, energy, security, medicine, food, and education – they learn how to work with each other, trust each other, and become part of a truly global community.

## ***This document and its conventions***

These rules are explicit. All teams are expected to abide by the LYRC competition rules as they are written and must follow the intent of the rule.

This rules manual is originally written in English but may be translated into other languages to improve the ease of access and understanding for teams. In the case of apparent conflicting meanings between a translated version and the English language version, the English version published on the "make it" website will be considered the correct version.

## **Participation rules**

### ***Teams***

The LYRC challenge brings together young talents from the country in order to find the most talented ones, some competitions will bring together a team representing Luxembourg in certain upcoming international challenges. As such, the competition is looking for

- young girls and/or boys,
- aged between 6 and 18 years (inclusive),
- with no skills or prerequisites required to participate.

We are looking for teams ideally between 2 and 10 members (youngsters, can be larger groups), max. 5 members for VEX challenge, plus one to two mentors (preferably with an experience in a science/technological/pedagogical domain). The team should be able to work together, meet in regular moments and provide feedback of their progress.

A team can be composed of people from all regions with the requirement to be able to work as a group and have a positive attitude towards the competition.

### ***Registration***

When you have your team ready, please fill in the registration on the [lyrc.lu](https://lyrc.lu) website and send it back to "make it" before the given deadline (see [lyrc.lu](https://lyrc.lu) website). You will receive a confirmation of your registration and a specific identity of your team.

As soon as the registration is completed, you will be contacted within a few days to discuss the hardware needed to complete the challenge. Please note that the hardware section will detail all the information necessary concerning the material chosen.

## The competitions

As "make it" wants to provide competitions for many levels and ages, our association proposes the following challenges (*age restrictions are inclusive, date of competition is reference date*):

### "make it" Concept Trophy

**Ages 6 to 10**

This challenge consists of developing a robotic concept answering the topic/challenge announced. As the very young participants can probably not code or build a robot, this challenge consists mainly of presenting a solution and/or concept to a question asked. The presentation can be done as every participant sees it: Slideshow, poster(s), cardboard models and, of course, all kind of models (such as LEGO®, makeblock robots, or any kind of hardware which is at their disposal). *Please refer to the competition guide available on [lyrc.lu](http://lyrc.lu) for further details.*

**Evaluation:**

- Presentation skills
- Solution(s) proposed

### CTF Challenge

**Ages 10 to 14**

The next level for the challenges is taking the hardware to programming. Robots which are programmable exclusively via a **simple block based coding** platform, can be used here (for example Dash or mBot). In this level of the challenge, teams have to come up with a solution to the proposed circuit of events by coding their robot in the most efficient way. *Please refer to the competition guide available on [lyrc.lu](http://lyrc.lu) for further details.*

**Evaluation:**

- Concept of solution
- Coding of solution
- Results of robot on the competition field

### VEX Challenge

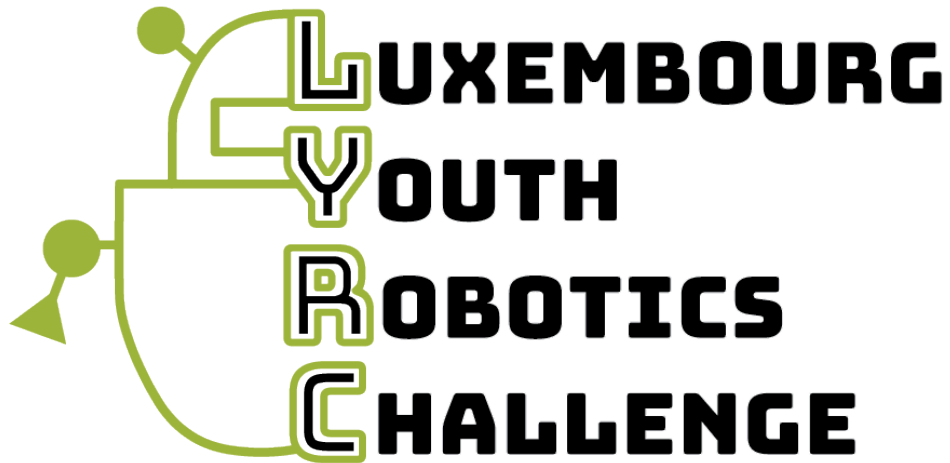
**Ages 14 to 18**

The challenge for VEX (VRC) requires teams to be efficient coders and builders. Based on a predefined problem to solve, teams can develop a robot at their home base, trying to find a solution for the global challenge. *Please refer to the competition guide available on [lyrc.lu](http://lyrc.lu) for further details.*

**Evaluation:**

- Coding of solution
- Efficiency

Points scored by robot



# Common ruleset

## General rules of behavior on the field

Fairness and professional behavior are always mandatory. Follow the schedule. Personal safety comes first.

- All team members must wear closed toed/heeled shoes.
- All team members must tie back long hair.
- All team members must wear appropriate clothing.

No saving seats. Teams are not permitted to save or designate seats for team members that are not present.

Don't throw items from the stands. Items may not be thrown from audience seating.

Some things don't belong at events. Do not bring or use the following:

- skateboards, 'hoverboards', roller-skates, inline skates
- drones or any other flying object
- any electronic device disturbing either bluetooth or WiFi frequency bandwidth (2.4GHz – 5GHz)
- bottled gas tanks (e.g. helium)
- noisy devices or noisemakers, such as floor stompers, whistles and/or air horns
- walkie-talkies

Do not arrange for Internet access or phone lines from venue service providers or attempt to use venue internet connections reserved for event purposes (e.g., FMS or streaming).

Don't sell stuff or distribute food. This includes, but is not limited to, raffle tickets, food, hats, shirts, candy, water, soft drinks, fruit, or any promotional products.

Keep unnecessary noise to a minimum. Do not invite or bring live bands to play in the audience. Do not play loud music.

Respect the venue. Teams may not damage the venue in any way, including, but not limited to bleachers, floors, walls, railings, etc.

Practice in the pits or on the Practice Field. Teams may only practice with their robot in their pits or in designated practice areas that are open to all teams at events.

No wireless communication. Teams may not set up their own 802.11a/b/g/n/ac/... (2.4GHz or 5GHz) wireless communication (e.g. access points or ad-hoc networks) in the venue.

Don't interfere with other wireless networks. No Team or Team member shall interfere or attempt to interfere with any other Team's or "make it" wireless communication. Except as expressly allowed for purposes of communicating with the Team's own robot on the Field or a Practice Field, no Team or Team member shall connect or attempt to connect to any other Team's or "make it"'s wireless network.

Children under 12 must be accompanied in the Pit by an adult at all times.

### ***Flags / Posters***

We encourage teams to bring team flags and/or signs for display in their pits and/or the playing field area, under these rules:

- Be respectful when hanging your flags and banners.
- Do not cover or move other team or sponsor signs already in place.
- Share the available space fairly with other teams.
- Do not obstruct the view of spectators.
- Hang signs in a safe manner.

Respect venue-specific rules regarding sign location and hanging methods. At the end of the event, safely remove all signs and anything used to hang the signs (tape, string, etc.).



## General game rules

1. During the competition, there can only be a maximum of four (4) team members in the competition pit area. The mentor is not allowed in the pit area. Team members can move freely in the designated pit area but cannot leave these areas. When in the pit, safety indications must be observed at all times and calls from the judges/referees must be followed.
2. The teams must be on the field at least 5 minutes prior to competition time, ready to perform. As soon as the competition is over, teams are required to leave the pit cleaned up for the next team to arrive.
3. Robots must stay on the competition field. If a robot goes completely out of bounds or appears to have a high likelihood of interfering with the game, it will be disabled by the Head Referee for the rest of the match. The robot can be attended after the match has finished and can be reenrolled in the next match.
4. Robots must not be dangerous or damaging to the field, other robots or humans around the field. Robot or team actions should not damage the field or field elements or pose a safety risk to other team members or volunteers. If the Head Referee determines the team to be in violation of this rule, or that the team has a high likelihood of violating this rule, the robot may be disabled for the match and must be re-inspected before taking the field again.
5. Play the game as intended. These rules are written as simply as possible to make them as accessible as possible, regardless of a team's native language. Attempts to gain competitive advantage by employing an unintended method of play violates the rules and does not meet the spirit of the competition.
6. Before a match can start, all robots on the playfield must meet this requirement and carry the "checkup" sticker obtained from the Jury's inspection desk.
7. Each drive team may consist of up to 4 members. These are the only team members allowed at the field and to set up the robot. Team members must remain in the pit during a match and cannot be replaced by another member.
8. No communication is allowed with persons outside the team on the field during a match.
9. Team members should not contact anything inside of or the playing field itself until a referee indicates that it is safe to do so. Team members should not reach into the playing field and contact the field surface, field structures, any game elements, or robots, either directly or transitively through an object, unless the signs on the field are Green to indicate that the playing field is safe to enter. This rule applies both before and after the match, and in all other situations.

10. Robots should stay in one piece on the field and may not intentionally detach and/or shoot parts on the field during a match. If a piece falls off the robot, the head referee will decide upon the action to be taken.
11. Don't intentionally damage, tip over, or disable other robots. Strategies which are aimed at damaging or disabling other robots are not allowed. Teams are responsible for the actions of their robots at all times. Driving recklessly is not an excuse for tipping or damaging another robot. Teams are also responsible for building a robust robot which will not easily tip or become entangled due to minor contact.
12. If a robot tackles an object on the field or tips over by mistake, the referee can (if gameplay allows it) access the field to put it up right. For this to happen, the robot needs to be at least 30cm away from any object (it's the referee's call whether distance is accurate). At no time, the teams should interfere with the game area.
13. Scores will be calculated when everything comes to rest at the end of the match.
14. Robots must function in imperfect situations. The field and placement of items within the playing field may vary by up to  $\pm 50$ mm except if specifically noted in the field build guide. Robot designs should be robust enough to work effectively even if the field or game elements are not perfectly sized or have a slightly different texture or color.
15. After the match has started, if a team's robot can only be interacted with in the team "home base" zone. Outside this area, no touching is allowed.
16. Communication with spotters in the stands or via any wireless communication means is not allowed. This rule is not intended to apply to general cheering and support.
17. Accidental tipping and entanglement may occur and is part of normal game play, however intentional or egregious violations as determined by the Head Referee may result in disqualification. Repeat offenses may result in a team being disqualified from the rest of the event.
18. Once the robot has moved under its own power, the robot may not be touched by any humans until the match has ended. Teams can only repair their own robot in their "home base", where robot contact is explicitly allowed.
19. Strategies aimed at causing an opponent to violate a rule are not allowed. If an alliance forces an opponent to violate a rule, the penalty that would typically be assigned to the opponent will instead be assigned to the alliance that forced the violation.

20. Robots may not grab, grapple, or grasp field elements unless otherwise explicitly permitted. Robot mechanisms should not be designed to react against multiple sides of a field element. This rule excludes game objects.
21. Scores are final and there are no replays, all Head Referee decisions are final and not up for discussion. All of the volunteers at LYRC work hard to provide fair and consistent game experience for all teams, but they are human and may make mistakes. How teams deal with adversity will say as much about their character as how they deal with success. Teams should avoid situations which could be rules violations and make their scoring actions very clear to avoid misunderstandings.
22. All teams are expected to behave in a respectful and professional manner when interacting with other teams and staff during the LYRC event. Students and adults are held to the same standard, and teams may be disqualified from the LYRC competition for uncivil or egregious behavior from any party affiliated with the team.
23. If teams have questions about rules or rulings, there will be a designated area near the field where the team can wait for the Head Referee or Technical Advisor and discuss the concern.
24. Robots must start each match inside the "launch" area located on the home base zone (colored in the respective team's color).
25. Game objects should stay on the playing field or be scored/moved to designated goals. Items accidentally ejected from the playing field will be reintroduced at the approximate location they exited when safe to do so. Intentional ejection of game pieces from the playing field will result in a verbal warning.
26. Human players must not directly interact with robots during the match. They are never allowed to touch robots, either directly or transitively through an object, except if the robot is totally inside the home base zone.
27. As soon as the match timer ran off, teams are required to drop their remote(s) and/or stop their robots through a button and lift their hands up over their head, so that referees can confirm the match was ended correctly. Referees will signal when team members can lower their hands again.

## ***The team booth***

At the LYRC, the VEX challenge competing team will have a booth space of approx. 3m x 3m, other competition teams will have a space of at least 2m x 2m. The space provided should be divided in different areas, but most importantly, must include a public relations area, where the team should present their robot and its history. This area should be used to present how their robot was built by showing some initial ideas, drafts, sketches up to the final result. Visitors should get a good idea of the effort the team made to build their robot. Exhibitors should also present the code/solution(s) used to program the robot.

The teams can use any method to present their work (slideshows, posters, pictures, printouts,...). The only limit teams have is the space they occupy. It cannot at any time, exceed the initially attributed space. Any excess will result in not scoring the PR points.

The jury will look at the booth and interview your team in order to distribute the points awarded to the PR section of the competition.

**Play safe**

**Stay fair!**

