



**robotex**  
International

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**ROBOLEAGUE 2023**

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# 1 Introduction

## Robot League 2023

Robotex International 2023 is supported by the Tallinn European Green Capital 2023 initiative. The initiative has set the following goals for the city of Tallinn: to bring the city closer to the people, to include more people, companies and non-profits in their planning and to support environmentally friendly initiatives. The European Green Capital has also been the source of inspiration for this year's Robot League theme - "My car free city".

The Robot League competition is a springboard for kindergarten and primary school children into the developing world of robotics. Unlike other Robotex competitions, the Robolight competition is not about speed and power, and does not determine the 1st-3rd place winners. Instead, we celebrate the arrival of all competitors at Robotex as an exciting learning journey and value teamwork, creativity and educational robot programming skills. This year, the Robot League competition will give children the chance to talk about their "Car free city".

In addition to kindergartens, schools and hobby groups, we also welcome all families to participate in the Roboliiga competition categories. Teams of 3 to 5 children up to the age of 12 can register.

Registration is open until 31.10.2023.

The participation fee is 10+VAT.

Registration takes place at:

<https://game.robotex.ee/>

## Inspiration

# "My car free city"

"Mia! Marten! Come on! We're in a hurry! I have to get to work!" said dad in a rushing manner.

Robit paced around the hallway anxiously with the kids coats, ready to hand them to the kids.

"Faster! Faster!"

Mia and Marten quickly had a few bites of the sandwiches mom made for them before rushing to the hallway. As always. Like they do every day. Quick, quick, quick! Mom came to give the kids a kiss, Robit retreated to the safety of the hallway corner to not get in the way. With their jackets on, all three rushed outside to the car.

The kids sat in the back and buckled their seatbelts. Dad threw his briefcase on the empty passenger seat in the front and so they were ready to go! Except they didn't.

Dad turned the key, but the car responded with a very strange noise. Prrr....prrrr..ttttt..tttt....prrr...pkpkpk.....

And suddenly, the car died altogether. Dad turned the key again and again, but nothing happened.

Anxiously, he stepped out of the car and looked around the car. He popped the hood of the car knowing full well he had no idea what was wrong. He opened the car door again and said "Alright kids, let's get a cab! There's something wrong with the car and it won't start."

Mia and Marten already guessed this and stepped out of the car.

Mia saw a seagull in the distance, who was being fed bread by their neighbor lady through her window. Mia ran toward the seagull, but the

seagull managed to grab the fallen piece of bread and took off. The seagull landed on the branch of an old chestnut tree.

"Look Marten! Have You noticed that the chestnuts have become ripe?"

"No, I haven't, I haven't even seen a chestnut this year."

Dad was still nervously pacing in front of the car trying to call a taxi. Finally, he succeeded.

"Okay, five minutes and the cab will be here. But we have to start by dropping me off at work, I can't be late today!"

"But dad, what if Mia and I just walk to school? It's not far and I'm sure we can handle it!" said Marten as Mia was filling her pockets with chestnuts.

"On foot? Alone? Are You sure? You've never walked to school before!"

"I'm sure dad, we can do it! I've been paying attention to the road as we've driven to school, I know where to go!" exclaimed Mia.

"Well I don't know, mom wouldn't allow this probably."

"But dad, we'll take Robit with us, he'll be our guide. Deal?"

"Well alright, but only if Robit comes with You! And only today!"

The kids jumped with joy as dad rushed to the already present taxi and flew off.

Robit could not hide his joy, he had been sitting inside for months with only one task - clean the house. The kids did not play with him as much anymore too, but now he had the chance to go to school with them!

The journey to school was exciting - every bush and tree was inspected with great depth! Mia even met some old friends from kindergarten and invited them over. In addition, Mia met a few friendly dogs and a cat along the way.

However, Marten found out that there was a new skatepark next to their home that he did not know about. He immediately made plans to come rollerskating there later that evening. Robit told the kids briefly about the surrounding houses, their history and even mentioned a really funny sounding and interesting word - architecture!

On the way, the kids stopped at a kiosk. Marten had a few euros in his pocket, so he bought himself and his sister some chocolate.

"That's for after school!" Marten taught his younger sister.

"Of course, it's not like I wanted it right now anyway... You know Marten, it's much more fun to go to school without a car." said Mia.

"I think so too! I think I'll start going to school by myself," said Marten to Robit.

Robit let out a few bells and flashing lights to let Marten know that he would love to join them.

"Of course, Robit! That would be fantastic!" Mia hugged Robit.

By the time they reached the school house, everything was oddly quiet. Class had already begun. The nice journey without a car had perhaps taken slightly longer than the regular route, but there was so much to explore! "So what if we were a little late" thought Marten and Mia and went to their classes. Robit stayed in front of the school and waited for them patiently.

In the evening, Mia and Marten told their parents about their journey to school.

Marten announced proudly that from now on, he will start walking to school. That way, there are less cars in the city if dad's car is not there.

"It does good for both the city and for us, trust me dad!" said Marten, like he would have had a real awakening.

"And it was so much more fun for us to go school with Robit!" exclaimed Mia.

Dad was slightly concerned, but agreeable.

"Well why not, let's start waking up slightly earlier and maybe even I could start going to work using my bicycle. It's been sitting in the cellar for years already."

So an agreement was reached together!

"What about You mom?" Mia suddenly asked.

"What about me?" said mom. "I've been walking to work every day for years. It's the best part of my day. I get to walk and organize my thoughts!" explained mom.

## 2 Competition project and robot

1. The competition project (hereafter the project) is a self-made mat or environment that is a prototype of the team's idea, the dimensions of which can be 0,4 x 0,4 x 1 m (W, L, H). The project with the robot must be transportable and fit on a 0,4m x 1 m table in the competition area.
2. The project can be made from a variety of materials and pieces, including natural or 3D printed materials.
3. The project must include at least one programmed robot performing at least three activities and/or scenes. Preferably, the activities could be in line with the team's chosen idea for the competition. For example, a robot on a mat might move from point A to point B (first action), dance (second action), say something (third action), etc.
4. The competition is open to a variety of programmable robots suitable for ages up to 12 years. For example: LEGO- WeDo, Bee-Bot, Blue-Bot, Codey Rocky, InO-Bot, Pro-Bot, Ozobot, Edison, Sphero, Strawbees Quirkbot, Dash, Dot, mBot, Engino ERP Mini and other robots of similar level and complexity.

## 3 Team

1. The team is made up of three to five children aged 12 or younger and an adult mentor.
2. The coach can be a teacher, a ring leader or a parent and cannot have more than one team in the same competition (to be checked at registration). The supervisor is responsible for the welfare and safety of the children on site.
3. It is recommended that teams wear similar clothing to stand out from the crowd.
4. The team is responsible for the security of the personal belongings they bring with them, including the competition entry and the robot.

## 4 Competing

1. When arriving at Robotex, you will have to go through the on-site registration before the competition.
2. Registration must be completed by the deadline set by the organisers.
3. The competition theme is "My Car Free City".
4. Children in a team will have three minutes (3 min) to present their project and must include:
  - a. an introduction to the project, or heroic story, of the mat and the activities carried out by the robot.
  - b. an introduction to the programming code, or algorithm, needed for the robot to work.
  - c. an introduction to the team members and their roles
5. The robot must remain on the competition mat during the presentation.
6. If the robot gets stuck, you can help it by lifting the robot or playground elements with your hand.

## 5 Feedback

1. Feedback on the competition entries will be provided by the competition mentors, who will visit the teams to give feedback on their work and, if necessary, ask the children for clarification.
2. The following elements will be taken into account when providing feedback:
  - a. idea - a bright idea and creativity;
  - b. Execution - the integrity of the competition mat/environment or prototype and the action/scene (robot mobility, detail and thoughtfulness).



**c.** program - preferably, the robot has been programmed using original code or an activity where the code or algorithm has not been inserted in a pre-programmed way (e.g. barcode scanning, etc.).

**d.** Teamwork - sharing tasks, involving all members and presentation.

- 3.** Feedback will be given to the teams on the same day. It is important to the competition mentors that all children have a good and positive experience.
- 4.** Any questions or problems that may arise during the competition will be solved by the mentors and/or the organiser.