

# ENGINEER CHALLENGE

## KIDS AGE GROUP



### GAME RULES

14th – 17th December 2023





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# 1. Goal of the challenge

The goal is to **provide equal education of high quality to everyone, with lifelong opportunities for learning.** We must make sure that every child, no matter where they come from, has the chance to go to a good school. It is all about everyone, **from parents to kids, has the chance to keep learning throughout their lives, going to classes, even when you're a grown-up, to learn new things.** For example, when you go to an interesting class at your school, or your parent goes to an extra class, or even when grandparents and little kids learn to use a computer together, that's part of quality education. We want everyone to have the chance to learn and grow, no matter their age, so they can make their lives better and help each other too.

**In the Edu Robotics Cup 2023 Kids Challenge we invite you to play and think about quality education together.** Take the time to have fun while solving the missions, make friendships tighter and have fun together with your mentor. He/She is learning a lot, too!

## 2. Game mat

Below you can see the game mat:



# 3. Game objects

**Important:** whenever a game object has to be placed on an area the bordering lines of the area are not considered part of the area. If there is no bordering line then the edge of the color of the area is considered the border.

## A single piece of your socks:

**Amount:** only one piece

**Placement:** anywhere in or above the “sock circle area”

## “Box” built from LEGO bricks:

**Amount:** 1

**Size:** minimum size of 16 x 16 x 1 bricks (can be larger as long as it fits in the “computer area”)

**Placement:** platform is placed anywhere within the center “computer area”

## LEGO minifigure (Any minifigure can be used, just make sure you identify them correctly):

**Amount:** 3 pieces

**Size:** standard minifigure

**Placement:** minifigure “Hannah”: anywhere in the “start area”

minifigure “Grandparent” starts from the top-left “grandparent circle area”

minifigure “Grandchild” starts from the “start area”

## 2x2 LEGO brick:

**Amount:** 1 yellow, 1 red, 1 white or black

**Size:** 2x2 LEGO brick

**Placement:** “spaghetti circle areas” from top to bottom: yellow brick on cheese, red brick on tomato, white/black on spaghetti

## Ruler:

**Amount:** 1

**Size:** 30 cm

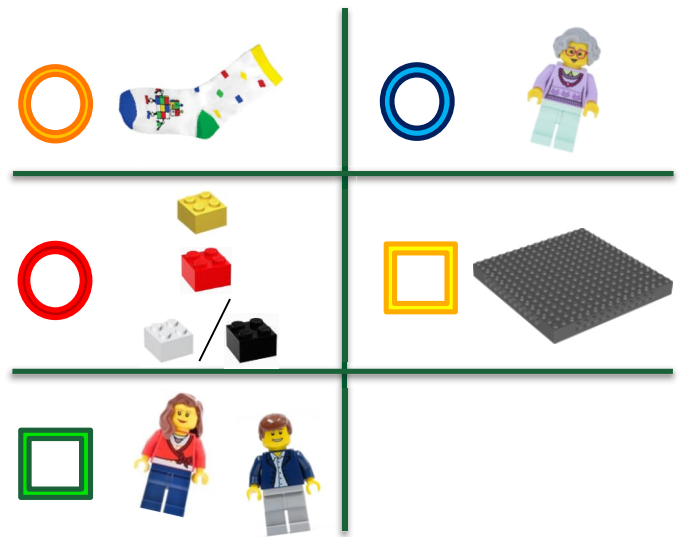
**Placement:** to show us in the video that the game mat is of the correct size you have to place a ruler on or next to the green rectangle at the bottom of the game field

## Before the start of the robot run don't forget about:

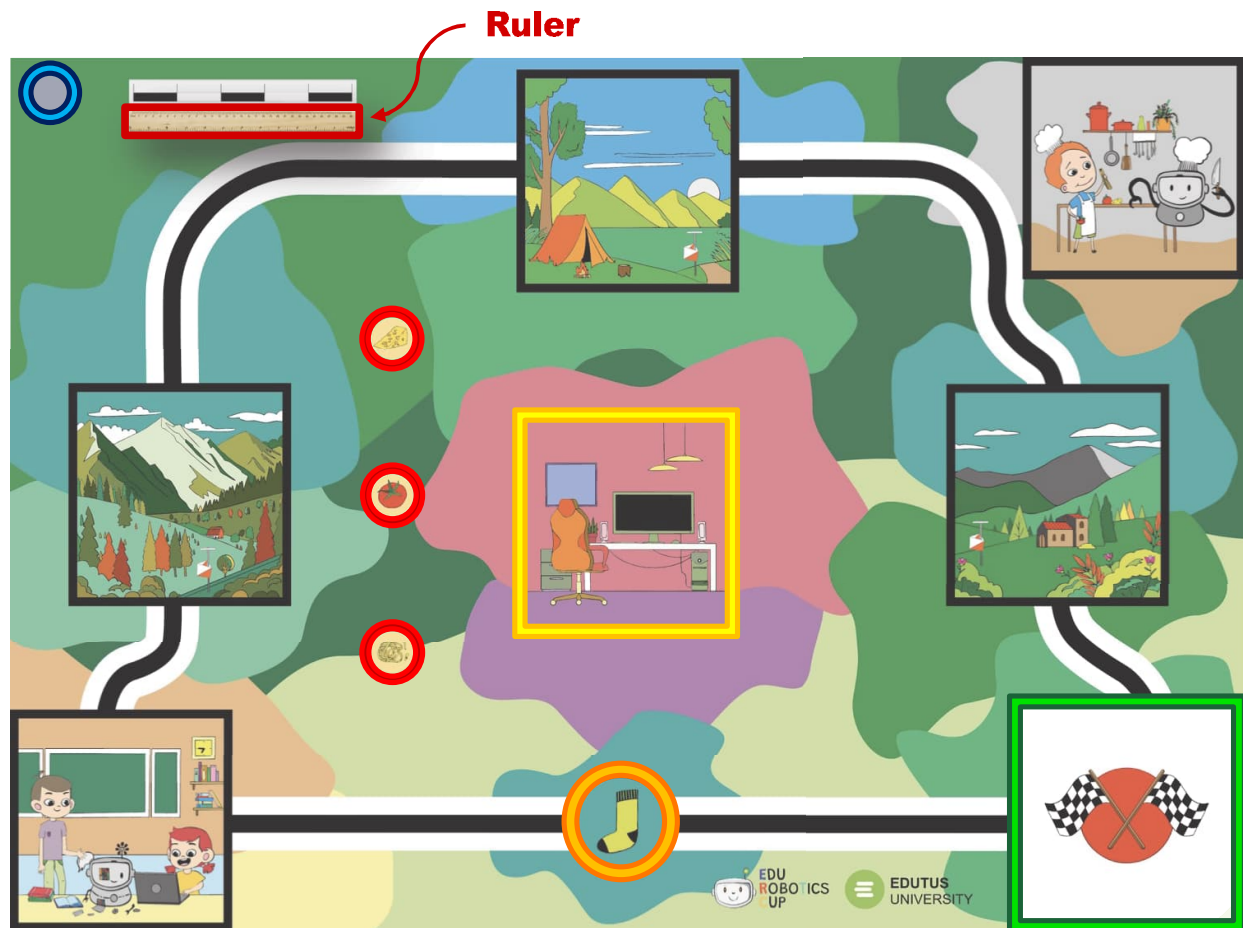
- start recording
- introduce your team
- share with us the name of your sustainable city
- place a ruler next to the black and white area and show it on record
- before robot run don't forget to remove it
- **HAVE FUN!**



# 4. Game objects on the mat



See picture below where to place the different game objects:



**In case of rule infringement:** If a game object is not placed on the game field in the correct position points for that object will not be awarded for the team.



# 5. Game tasks

The robot has to start (completely inside) from the Start area in the bottom right part of the game field.

## Hannah to learn robotics:

Hannah is in the last year of kindergarten and will check out the magical world of robotics in a playful manner. She is quite happy to learn that his brother's school is welcoming 6-year-old kids in their smallest robotics afternoon class to play around and join their WRO teams later. (Any minifigure can be used, just make sure you identify them correctly)

**Let's take Hannah to the school to play and learn robotics!**

## Parents in evening classes:

Thomas's mother has started to work again and decided to gain further knowledge about economics and computer programming.

Thomas is very handy and helps his parents with many things and makes sure to tidy up the place removing dirty clothes till his parents arrive home.

**Remove the sock completely from the game mat.**

## Peter and the spaghetti:

Peter likes eating good food, yet as he is growing older finds that often he feels great hunger in the afternoons. When he was younger, he ate chips and muesli. Now he has taken a cookbook and decided to learn how to cook various meals.

We will help him prepare a Tomato Spaghetti together – **collecting cheese, tomato sauce and pasta and assembling them in the kitchen.**

**Important:** You are allowed to touch the bricks once the robot brought them completely into the kitchen area. You are not allowed to touch the robot!

All ingredients assembled in the correct order in the kitchen area. (pasta: bottom, tomato: middle, cheese: on top)





## Isa is learning a new movement:

Learning can happen in and outside of school. This weekend Isa will learn a new sport – orienteering as she has heard that her mother is fond of this awesome sport. Orienteering is all about learning to read maps, finding your ways, while being in nature. Isa is represented by your robot, but you are invited to add any LEGO decoration or minifigs to your liking. **Move your robot above the tree icons with the orienteering control points and mark the location with your robot by flashing an image or playing a loud sound.**

## Sofia and Anna teach computer Grandma and Grandpa:

When your grandparents were born families visited one another to watch television in enormous machines showing only blurry black and white movies. Computers, DVDs, USB sticks and mobile phones just hopped into their lives from one day to another. Sofia and Anna are really fortunate to have grandparents who are ready and happy to learn new things. Will you be ready to learn how to use a teleport beam or flux capacitor when you are at the age of 70? **Take the grandparent and the grandchild to the computer room** so they can enjoy quality time together! (Any minifigure can be used, just make sure you identify them correctly)

## General rules:

Your robot must start from the “Start area” and should always be in touch with the mat.

Tasks should be evaluated at the end of the match.

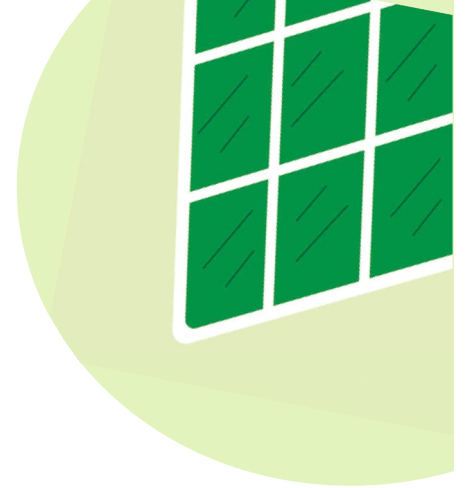
The robot should not touch any of the task materials at the end of the match.

You are not allowed to touch the robot nor can you touch any model material except for “Spaghetti blocks” in the “Kitchen area”.





# 6. Scoring



Tasks	Score
<b>Hannah to learn robotics</b>	<b>maximum 10 points</b>
Hannah is located entirely in “Robotics class” area (bottom-left in the game mat)	10 points
<b>Parents in evening classes</b>	<b>maximum 10 points</b>
Sock is removed from the mat completely	10 points
<b>Peter and the spaghetti</b>	<b>maximum 40 points</b>
Any ingredient removed from its starting position	5 points / brick (total: 15 points)
Any ingredient completely in the “Kitchen area”	5 points / brick (total: 15 points)
All ingredients assembled in any form in the “Kitchen area”	10 points
<b>Isa is learning a new movement</b>	<b>maximum 15 points</b>
Robot flashes an image or plays a sound while above the “Orienteering control point” area	5 points / area (total: 15 points)
<b>Sofia and Anna teach computer Grandpa and Grandma</b>	<b>maximum 40 points</b>
Grandparent and grandchild minifigures are on top of the platform, touching it within the “Computer Area”	10 points / minifigure (total: 20 points)
Bonus: both of them are in the scoring position	20 points
<b>Total score</b>	<b>115 points</b>

## Definitions for scoring

**Completely inside:** every part of the game object that touches the game field only touches the target area not including the surrounding line.

**Touching:** the game object touches the target area not including the surrounding line. Important that in this case the game object is not completely inside the area, because that is a different case.

