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ROBOTICS
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ENGINEER CHALLENGE MASTERS AGE GROUP

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Game Mat

Below you can see the game mat:



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.

Match box

(only the bottom)

Amount: 1

Size: standard small match box (35 x 53 x 10 mm)

Placement: you only need the inside of the match boxes. It will start open side down completely inside the rectangle area in the middle of the game field (marked with red X in the picture below)

Table tennis ball

Amount: 1

Size: standard 40 mm diameter

Placement: the ball goes on the plastic bottle cap

Plastic bottle cap

Amount: 1

Size: standard size 23 – 28 mm diameter

Placement: place the cap completely inside the small circle area marked with green X in the picture below

Lego mini figure

(only head + body + legs, no other accessories allowed)

Amount: 1

Size: standard Lego mini figure

Placement: the mini figure is lying underneath the inside of the match box (marked with red X in the picture below)

Domino pieces

Amount: 5

Size: 40 x 20 x 5 mm

Placement: standing up completely inside the thin rectangles in the top left part of the game field (marked with red circles in the picture below)

Shoelace

Amount: 1

Size: any size

Placement: the shoe lace can be placed on the game field any way you want but the two ends of lace have to touch the small circles marked with orange circles in the picture below

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

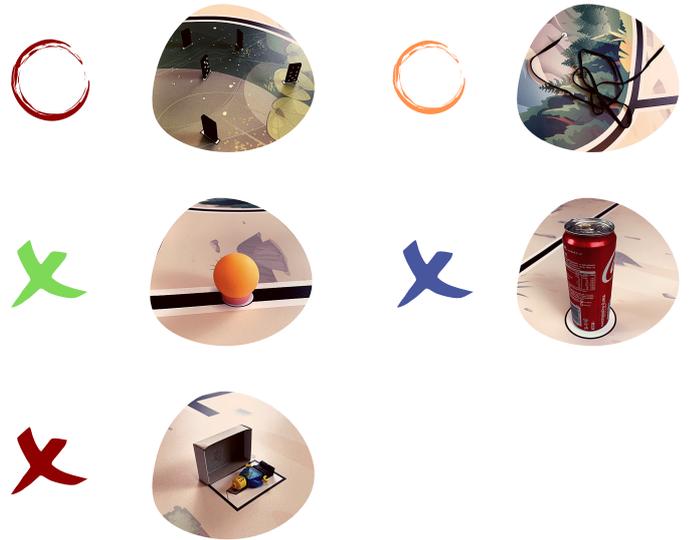
Soda can

Amount: 1

Size: standard with base diameter 58 mm

Placement: the base of the soda can has to be completely inside the circle marked with blue X in the picture below

Game objects on the Game 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.

Game Tasks

The robot has to start completely inside the wooden house area in the upper left part of the game field.

Save the egg

An egg (table tennis ball) has dropped out of the nest. You have to put it back in the nest on top of the pine tree (soda can).

Retrieve the climbing rope

Some mountaineers lost their climbing rope (shoelace) in the mountain. Retrieve it for them and keep it with you so you can give it back when you meet the mountaineers.

Collapsed tent

Someone was camping in the middle of nowhere and her tent collapsed on her. Get him out from under the collapsed tent and take her to the camping site.

Collect reed

There is too much reed (domino) in the swamp, cut it and collect it in a pile.

Parking

Park the robot completely inside the camping site. Points are only awarded if any other points are achieved by the team from tasks 4.1. - 4.4.

Scoring

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.

Tasks	Score
Save the egg	
The egg (table tennis ball) is on top of the pine tree (soda can) and the can is still touching its starting circle area	30
The egg is on top of the pine tree (soda can) and the can is no longer touching its starting circle area	10
Retrieve the climbing rope	
The climbing rope (shoelace) only touches the robot and nothing else – hence the robot is carrying it with itself	30
The climbing rope is not touching any of its two starting circles but touches something else apart from the robot	10
Collapsed tent	
The projection of the camper (mini figure) is completely inside the camping area and the collapsed tent (inside of match box) touches its starting area	40
The projection of the camper is completely inside the camping area and the collapsed tent does not its starting area anymore	30
The camper no longer touches its starting area and no part of it is under the collapsed tent	10
Collect reed	
The reed (domino) is completely inside the reed collecting area	25 5 / reed
The reed is piled up meaning that it only touches another reed (not the game field, not the robot and no other game object)	40 10 / reed
Parking	
Robot parked completely inside the camping site area	10
Technical points	
Recorded and uploaded video includes all requested parts: <ul style="list-style-type: none"> • robot, • game field and game objects, • robot run, • end position of robot and game objects. 	10
The team uploaded only one video file and one program documentation, which apply to the requested format and naming format.	5
Total score	190