

AFTERNOON CHALLENGE – SENIOR

The following objects are needed and placed on the playing field as shown in the plan below:

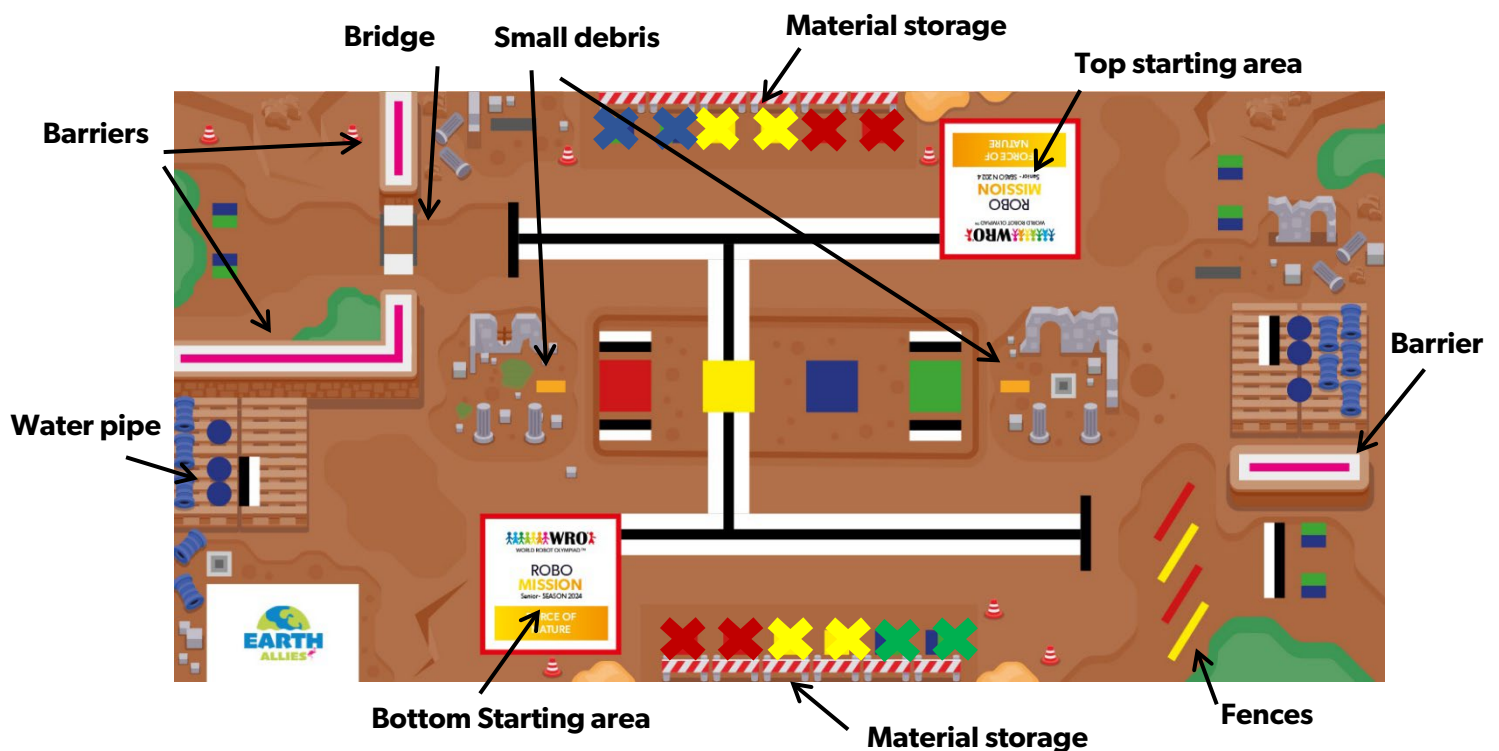
- 1 water pipe (positioned on the blue circles on the left side; state: connected)
- 1 bridge
- 2 small debris elements (yellow)
- 3 barriers
- 4 fences
- 12 house elements in material storage

Please remove all other objects.

YOUR MISSION

Your robot can start in one of the starting areas of your choice. It has to be fully inside the area when viewed from above.

All other objects are placed on the playing field as described above and indicated on the plan below.



TASKS

- **Sub-task 1:** Build a house in the blue square with floors of different colors. The bottom house element must be completely in the blue square. All house elements must be stacked with the studs facing upwards. Maximum points are awarded if the house contains elements of all 4 colors (**20 points**). The following table shows the scoring of this task:

One-colored house	3 points
Two-colored house	8 points
Three-colored house	14 points
Four-colored house	20 points

- **Sub-task 2:** Build a pyramid with two elements in the ground floor and one element in the first floor in each of the two starting areas. The first-floor element must stay horizontally on the two ground-floor elements. The studs of all elements are facing upwards. The two elements in the ground floor must be completely inside the starting area (not touching the red line). Maximum points are awarded if the two pyramids are placed correctly: **26 points**
The following table shows the scoring of the task per pyramid:

One element in the starting area	3 points
Two elements in the starting area	6 points
The starting area has two elements which carry together one element	13 points

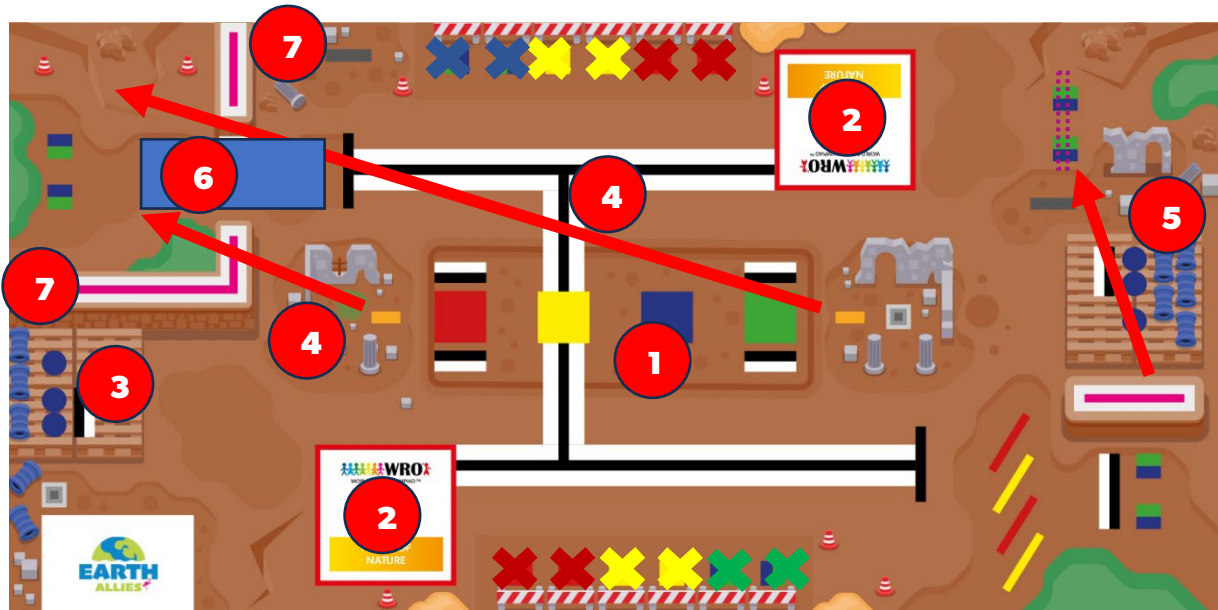
- **Sub-task 3:** Disconnect the water pipe on the left side (**8 points**).
- **Sub-task 4:** Transport the two small debris elements completely into the area in the upper-left corner. Maximum points are awarded if both small debris are in the corner area and their projection does not touch the white surrounding areas of the barriers (**12 points**).
- **Sub-task 5:** Place the bottom-right barrier in such a way that it touches both starting positions of the house elements in the upper right corner (**10 points**).
- **Sub-task 6: 6 points** are awarded if the bridge touches the ground on the left side as final state of the run.
- **Sub-task 7:** 4 points are awarded for each barrier in the top-left area if it remains within its white surrounding area (**maximum 8 points**)
Please note: These points will only be awarded if you have received any points in the sub-tasks 1 – 6.

Unless otherwise mentioned, no partial points are awarded if the objects are not completely inside their target area or if they are damaged.

Please note:

The robot can solve the sub-tasks in any order you like.

TARGET AREAS



Good luck, and enjoy solving the Afternoon Challenge!

GENERAL RULES

The maximum time for a competition run is 120 seconds. The maximum size of the robot is 25 cm x 25 cm x 25 cm.

You have the chance to show 4 competition runs ("runs") to the judge. There are two deadlines, one at **15:45** and one at **17:00**. You can show two runs before either deadline. For each deadline, the better run of the two is counted towards the final result. The scores and the times of these two runs will be added to the score and time you already have from the normal RoboMission challenge. If you cannot show a run before a deadline, this will be scored as 0 points / 120 seconds.

Please inform the judge in time that you want him or her to judge a run.

AFTERNOON CHALLENGE – SENIOR

Team: _____

Run: _____

Task	Points possible	Points awarded
Sub-task 1: Build a colorful house		
A house is built of 4 elements of different color. (1 color: 3P; 2 colors: 8P; 3 colors: 14P; 4 colors: 20)	20	
Sub-task 2: Build a pyramid in each of the 2 starting areas		
3 points for each ground-floor element whose projection is inside the red border of the top starting area (max. 2 elements)	6 (3 + 3)	
7 point for the element standing horizontally on top of the two ground-floor elements inside the top starting area	7	
3 points for each ground-floor element whose projection is inside the red border of the bottom starting area	6 (3 + 3)	
7 points for the element standing horizontally on top of the two ground-floor elements inside the bottom starting area	7	
Sub-task 3: Open the water pipe		
The water pipe on the left side is open	8	
Sub-task 4: Place the debris in the field in the top left corner		
6 points for each debris element within the top left corner, if its projection does not cover the white area around the barriers 6P	12 (6 + 6)	
Sub-task 5: Move the bottom right barrier		
The barrier has contact with the 2 house element fields in the top right corner of the playing field	10	
Sub-task 6: Final state of bridge		
The left end of the bridge touches the playing field	6	
Sub-task 7: Leave the barriers in place (only if points were awarded in sub-tasks 1 to 6)		
4 points for each barrier near the bridge that stays completely within the white zone	8 (4 + 4)	
Total	90	
Time in seconds	Max. 120	

Signature Team

Signature Judge