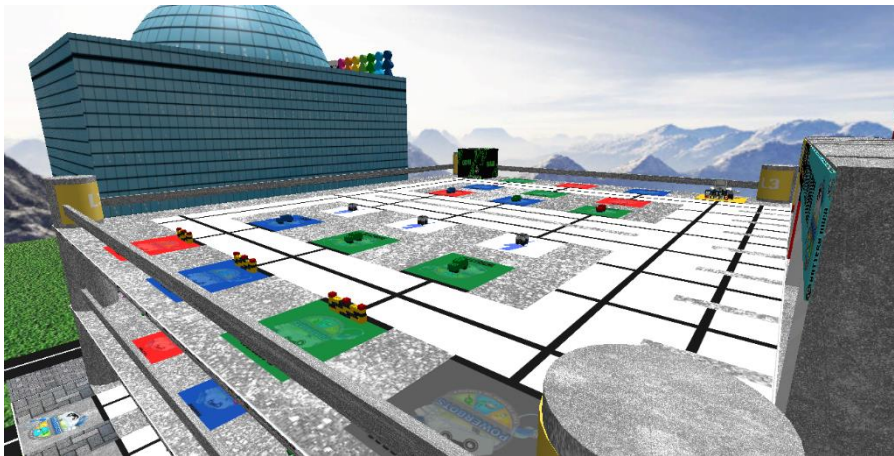# World Robot Olympiad 2021

Regular Category

Junior Beginner Level

Park & Charge

Table of Contents

General Rules

1. All teams must consist of 2 or 3 competitors.

2. The team must be from the category age group or younger. The competitor must never be older than the category age group.

3. **It is not allowed to make changes in the environment before, after and during the simulation.**
   On Beginner level is not allowed to import your own robot.

4. When the simulation starts, the competitor can only use the camera's tools and the scoreboard button.

5. All the tasks need to be solved only by using the code created by the participant for the robot.

6. **In case, the Judging Team suspects of the score/time of any competitor, they can request a video or a conference from the participant, to prove how their result was gotten according to the rules and requirements allowed. In case the competitor doesn't accept the video, conference or doesn´t prove how the score/time was gotten, the result will be deleted from the ranking.**

7. In all the categories the top 20 must send a video of their robot solving the challenge.

8. In the video, the robot must get the same points as displayed on the leaderboard. The robot's time must be the same as the time on the leaderboard ± 1.2 seconds.

In case of any unforeseen circumstances in which the rules have to be altered, the judges will have the final say in the results.

The judges have the utmost authority to amend the rules and regulations.

The judges have the utmost authority to disqualify a result if:

1. Participants pause and resume the simulator in between the code.

2. Participants create any other situations which judges deem unacceptable

Format of the competition

There will be three newly designed VRT Mat Challenges.

On each WRO Age Group, there will be two challenges with the same Mat. One will be a Beginners Challenge and another will be an Advanced Challenge. The Advanced Challenge will be more complex and the teams are allowed to import their own robot.

You can only participate in one of the two challenges per Age Group. That means that you must choose between Beginners and the Advanced Challenge.

	Elementary Category Beginners Level	Junior Category Beginners Level	Senior Category Beginners Level	Elementary Category Advanced Level	Junior Category Advanced Level	Senior Category Advanced Level
Age	Max. 12 years	13-15 years	16-19 years	Max. 12 years	13-15 years	16-19 years
Team Size	2 or 3 competitors per team					
Official Simulator	Virtual Robotics Toolkit					
Robot	It´s not allowed to import your own robot.			Is allowed to import your own robot.		
Software	Open to any control software that can connect to Virtual Robotic Toolkit					

Robot Missions

The robot must move the red car to the petrol parking area on the first section of the challenge.

The cars of the third section are on the wrong place, the robot must move the cars to the second section.

The robot must move the batteries to the fifth section.

The mission is complete when the robot parks into the final area and the chassis of the robot is entirely (top-view) within the area.

For more understanding you can see the next sample video:

https://youtu.be/kdOfpsdFZFw

Score

| Junior Beginner Category Park & Charge	Each	Total
Parking		
Red car delivered completely in the petrol parking area on the first section.	**30**	**30**
Move cars to the correct parking area		
Blue car delivered completely in the hybrid parking area on the second section.	**10**	**10**
Green car delivered completely in the electrical parking area on the second section.	**10**	**10**
Red car delivered completely in the petrol parking area on the second section.	**10**	**10**
Batteries		
Battery delivered in one of the parking area of the fifth section. Only one battery per parking area.	**10**	**30**
Park the robot		
Robot stops on Finish Area and simulation stops. (only if other points are assigned)	**10**	**10**
Maximum Score		**100**

Scoring Interpretation
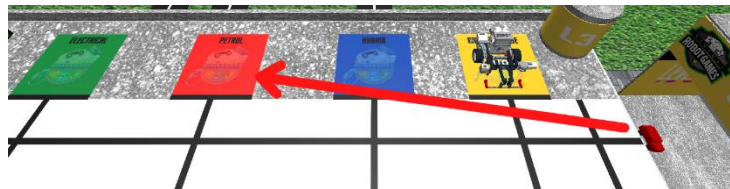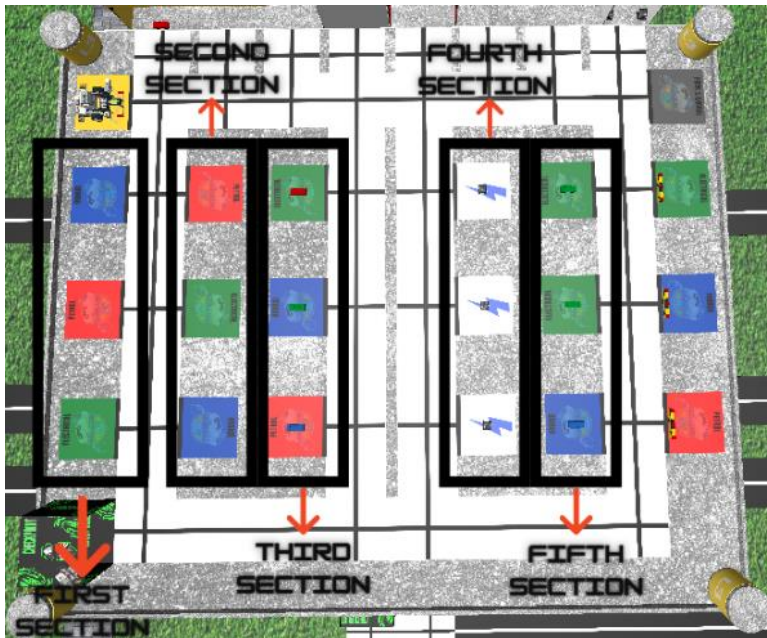
Red car delivered completely in the petrol parking area. It is not important if the car is standing or lying but it is important the object to stay completely inside the zone.
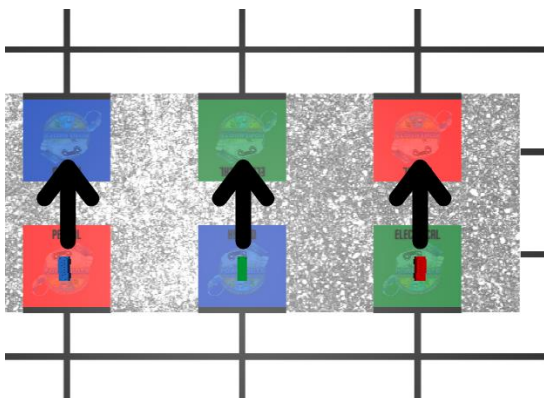
Car delivered completely in the parking area. It is not important if the car is standing or lying but it is important the object to stay completely inside the zone.
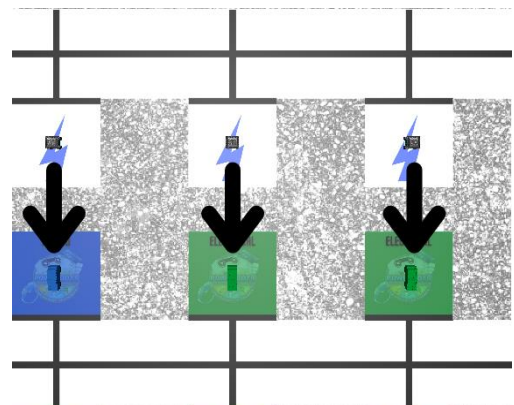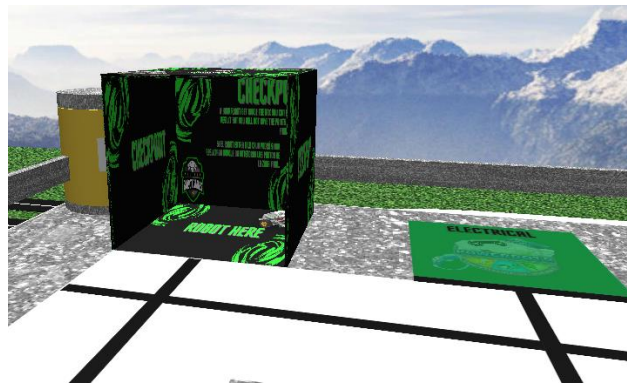

Battery delivered completely in the parking zone It is not important if the battery is standing or lying but it is important the object to stay completely inside the zone.

Robot stops on Finish Area and simulation stops.
(only if other points are assigned)

Checkpoints

In the challenge you can find checkpoints, the robot can go inside and you will be able to submit your result.
If the robot is inside the checkpoint you will not get the point of the final zone.

Important Information

Details of specific tasks (To be announced)

The end time to **submit results** is (To be announced)

The end time to **fill the form** is (To be announced)
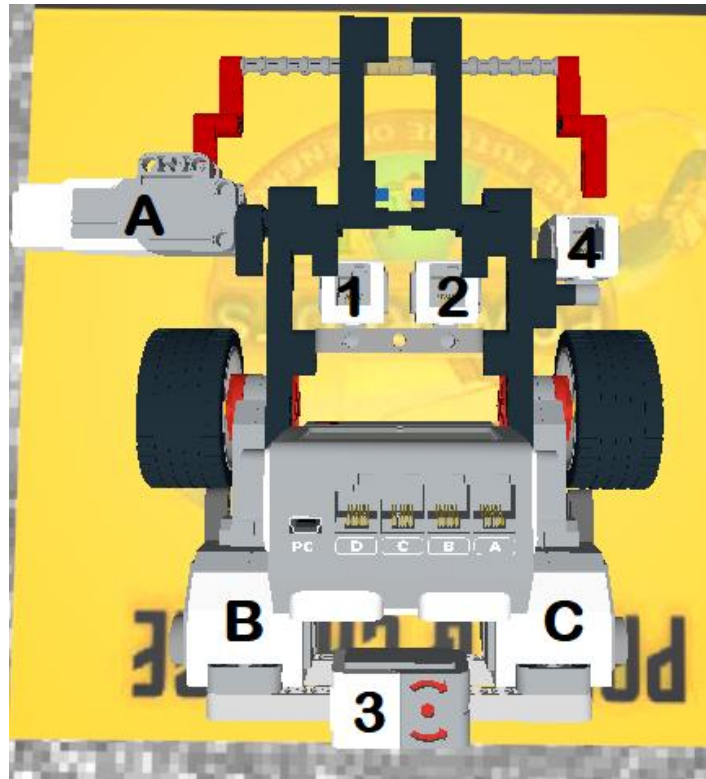
Closing Ceremony is (To be announced)

If a top 20 participant doesn´t fill the form we will take the score out of the leaderboard.

Recommendation:
If you think your result will be on top 20 you can fill the form before (To be announced end of May).

Robot Ports

Beginner Level: *Remember, it is not allowed import a new robot.

Tie Result

18	Participant 1	2020-11-05	5	100	00:55.955
18	Participant 2	2020-11-05	3	100	00:55.955

If participants have the same result on the leaderboard the judging team will review the next highest results of the participants.
When the judging team knows who get better results will take out 0.001 seconds to the time on the leaderboard of the participant winner to tiebreaker the result.

On the example "Participant 2" get a second better high score, it means we will take 0.001 seconds of the participant time result.

18	Participant 2	2020-11-05	3	100	00:55.954
19	Participant 1	2020-11-05	5	100	00:55.955

If one of the participants only have 1 submitted round the other participants will be the winner of the tiebreaker.

Difference from the Real Time Result

Judging team detected less than 1% of the users have a PC issue where the time result that it submits takes out the decimal seconds.
Example:

Real time result: 00:55.230
Submitted time result: 00:55.000

If the participant has this issue and is on the Top 20, we will exchange with the time displayed in the video.

Remember if you are in the Top 20, it is very important to fill the form with your video, in case the participant hadn´t fill the form with the video the result will be taken out of the leaderboard.

How to create your video?

You need to record computer screen using Windows 10 Function, QuickTime player, OBS or other option to record screen.

Screen record Windows 10

https://youtu.be/mVJsm_000c0

Screen record Mac

https://youtu.be/s9xnsj6ditM

Screen record OBS

https://youtu.be/QKmrDUJFRkM

Install OBS:

https://obsproject.com/

The participant must upload the video on YouTube, Vimeo, Google Drive, etc.

How to upload a video on YouTube?

https://youtu.be/4RZ3FooBKYE

If you upload your video on YouTube, you have to publish it as Public or Unlisted.

Record Details

-On the video, the participant has to show the robot solving all the challenge. If the video starts after the robot begins solving the challenge or cuts the video before the robot finishes the task, the video will not be valid.

-The robot and the scoreboard must be visible all the time.

-On the video the participant must use "Top Camera" and "Tether" tracking type.

Top Camera and Tether tracking type

1) Need to open Advanced Mode.

To access "Advanced Mode", all you have to do is press "F12" on your keyboard.
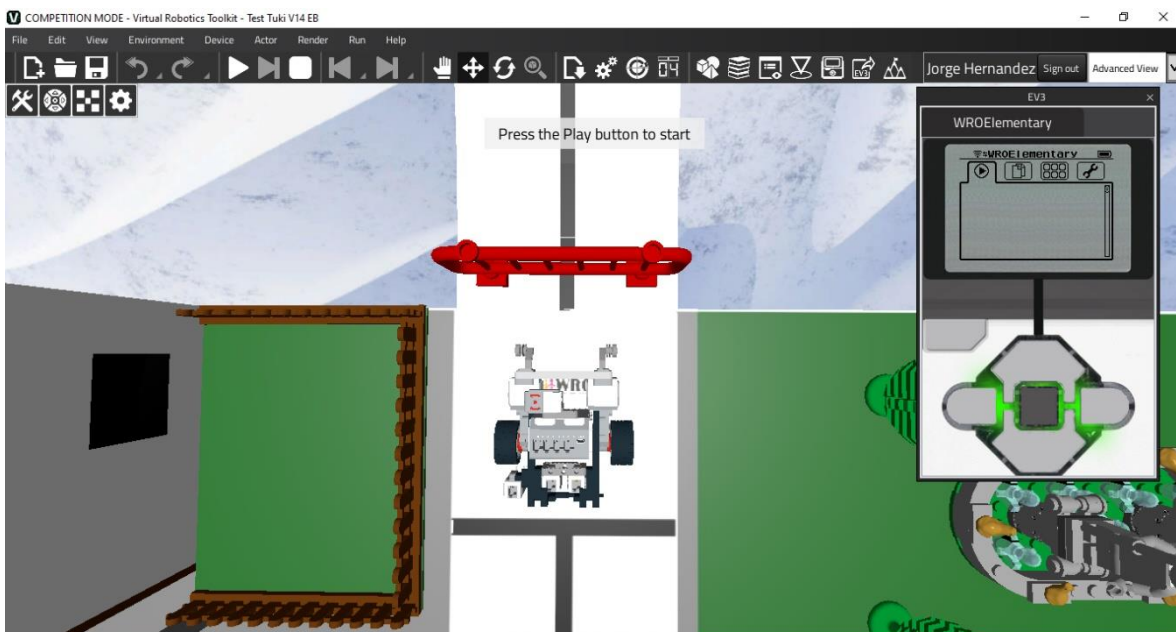Could be:
-F12
-Ctrl+F12
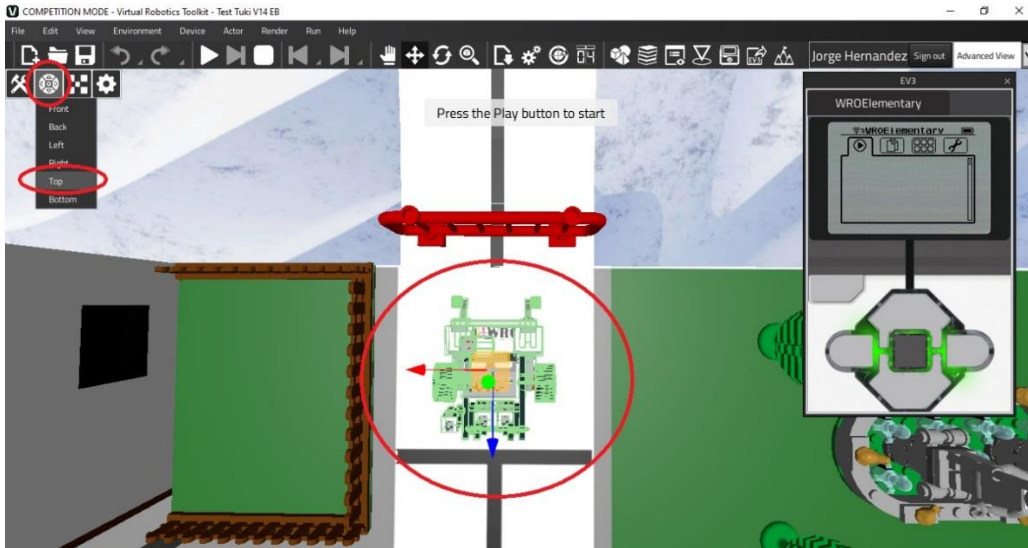
-Fn+F12

-Alt+F12

-Cmd+F12

Simple Mode

Advanced Mode
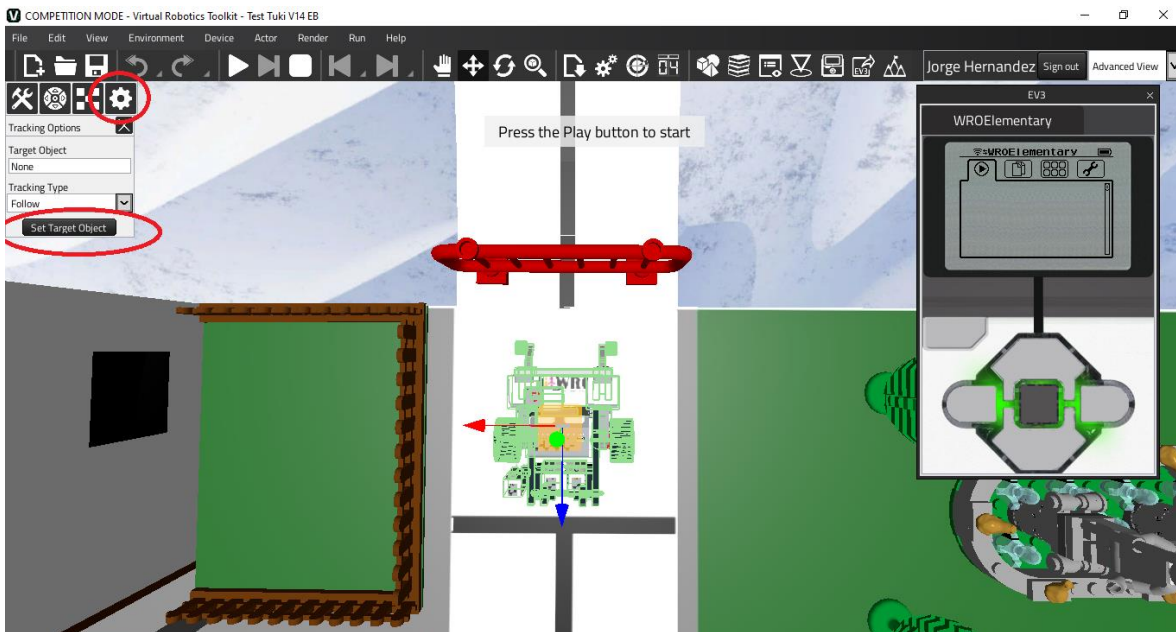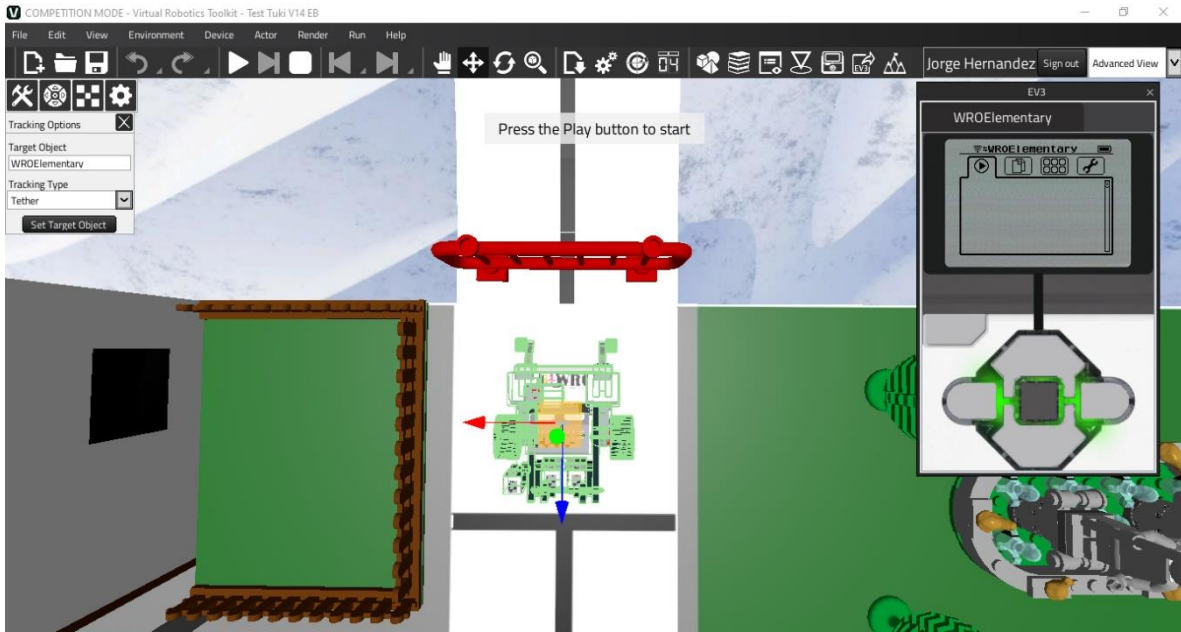

2) Move the Virtual EV3 Brick.

3) Select the robot and use Top Camera.

4) Use "Tether" Tracking type.

The robot must be selected and then click on "Set Target object".
Change Tracking type to "Tether".

Top Camera & Tether Tracking type tutorial:

https://youtu.be/hNvJNMnV9dM

How to share your video to us?

The participant needs to click on the link and fill the form.

Please be aware of your email, because in case there's a problem with your video or your results, we will contact you.

Forms will be available near the competition.

*Please be careful, the form is specific for this category