VIRTUAL ROBOT GAMES

WRO™ WORLD ROBOT OLYMPIAD

ROBOT VIRTUAL GAMES 2020

World Robot Olympiad 2020

Regular Category

Elementary Advanced Level

WINDSTORM VIRTUAL CITY

LEGO education

JUNIPER NETWORKS

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General Rules

1. All teams must consist of just one competitor.
2. The competitor must be from the category age group or younger.
3. The competitor must never be older than the category age group.
4. **It is not allowed to make changes in the environment before, after and during the simulation.**
5. When the simulation starts, the competitor can only use the camera's tools and the scoreboard button.
6. All the tasks need to be solved only by using the code created by the participant for the robot.
7. **In case the Judging Team suspects of the score/time of any competitor, they can request a video or a conference to 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.**
8. In all the categories the top 20 must send a video of their robot solving the challenge.
9. 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 ± 2 seconds.

	Elementary Category Beginners Level	Elementary Category Advanced Level	Junior Category Beginners Level	WRO Junior Category Advanced Level	Senior Category Beginners Level	Senior Category Advanced Level
Age	Max. 12 years	Max. 12 years	13-15 years	13-15 years	16-19 years	16-19 years
Team Size	Only 1 competitor per team					
Official Simulator	Virtual Robotics Toolkit®					
Scoring type	The winner will have the Best Round. The parameters are Best score and Lowest time.					
Robot	It´s not allowed to import your own robot.					
Rounds	The competition consists on10 rounds, competitors can test as many times as they wants, but they can only submit results 10 times.					
Software	Open to any control software that can connect to Virtual Robotic Toolkit.					
Competition Fee	$18 USD per competitor.					

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

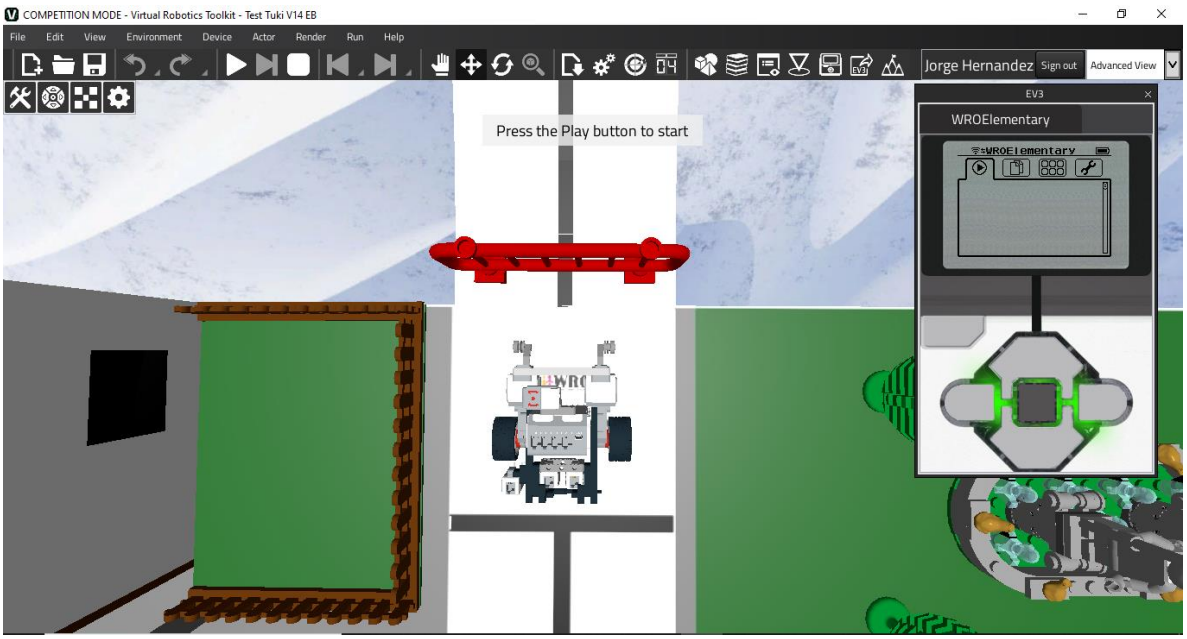
-Alt+F12

-Cmd+F12

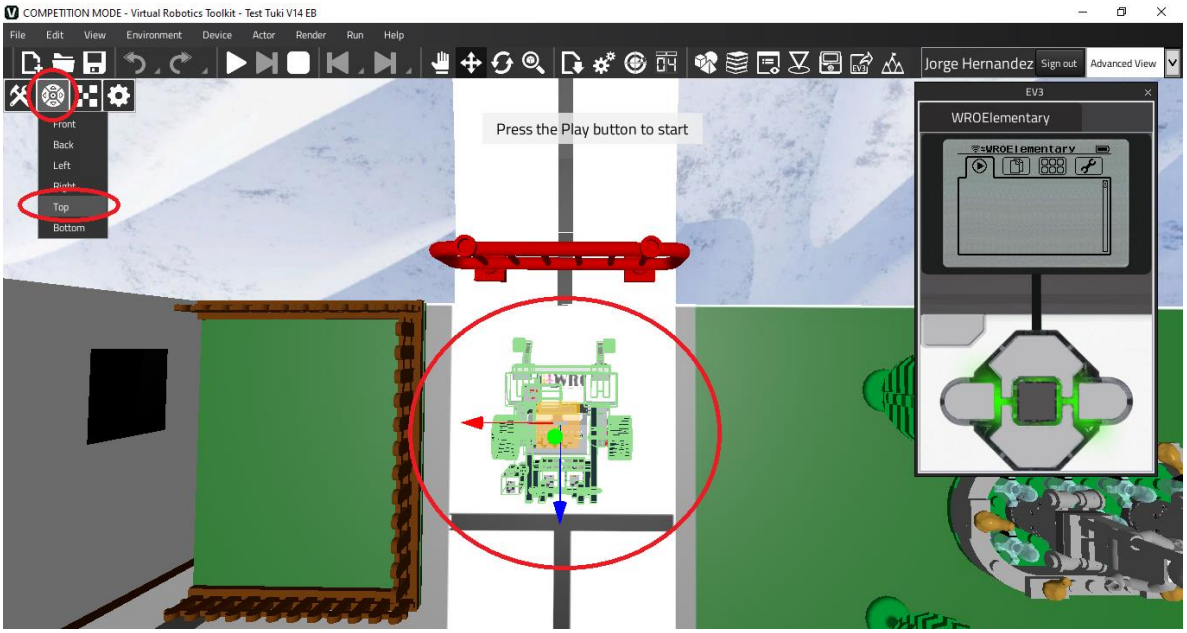
Simple Mode

Advanced Mode

2) Move the Virtual EV3 Brick.

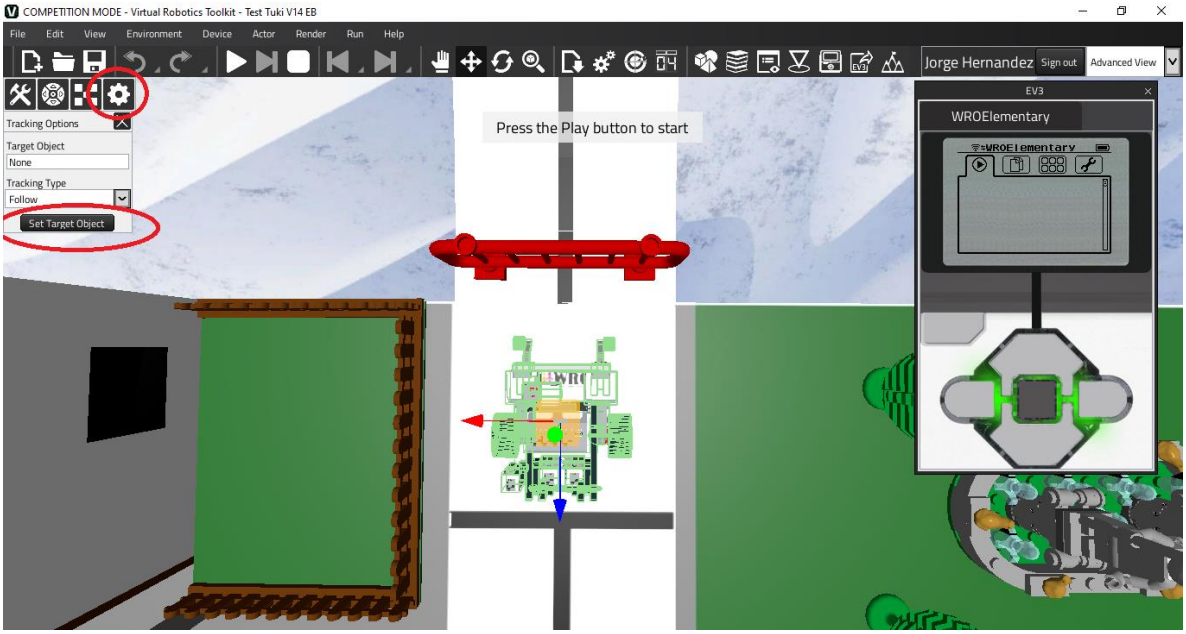


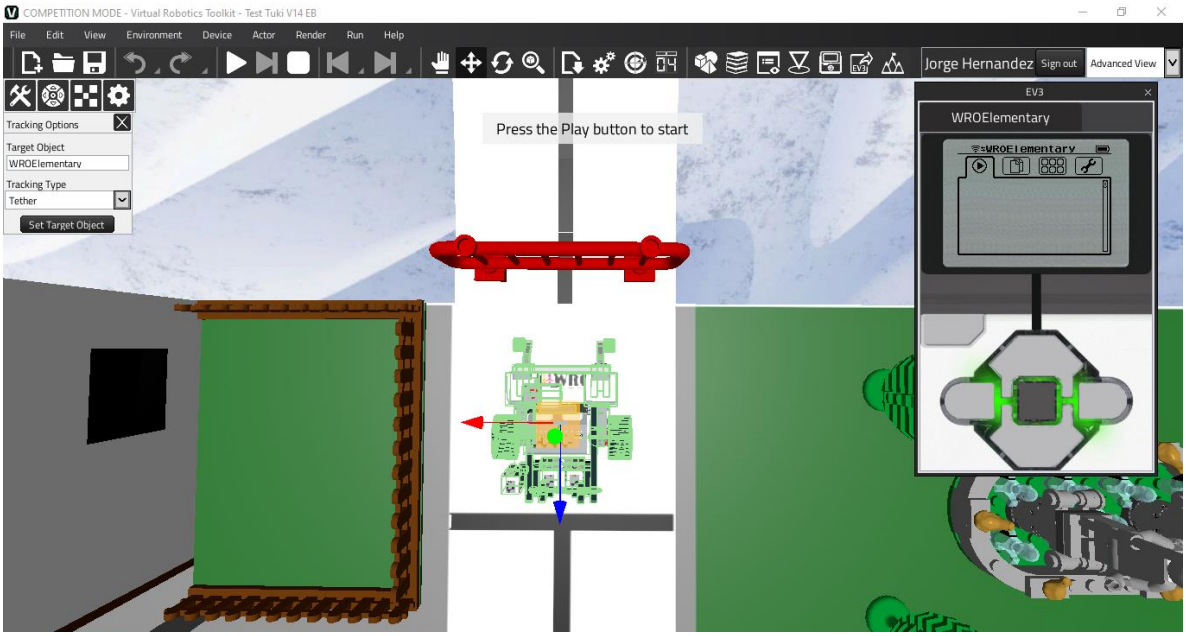
3) Select the robot and use Top Camera.



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.

Chinese Form:

https://forms.microsoft.com/Pages/ResponsePage.aspx?id=jMH9fViBM0iLXpejyaqRx-RsQEhwhIpKhROMjdiDAFdUNkxLOEtTRU5MVlITSVYwSkoxQjhZMTBFVC4u

Rest of the World:

https://forms.gle/k4N4MS5rMEXeubN26

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

Important Information

The end time to **submit results** is November 11 at **8:00 pm** GMT-5.

The end time to **fill the form** is November 11 at **9:00 pm** GMT-5

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 8:00 pm.

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 Real Time Result

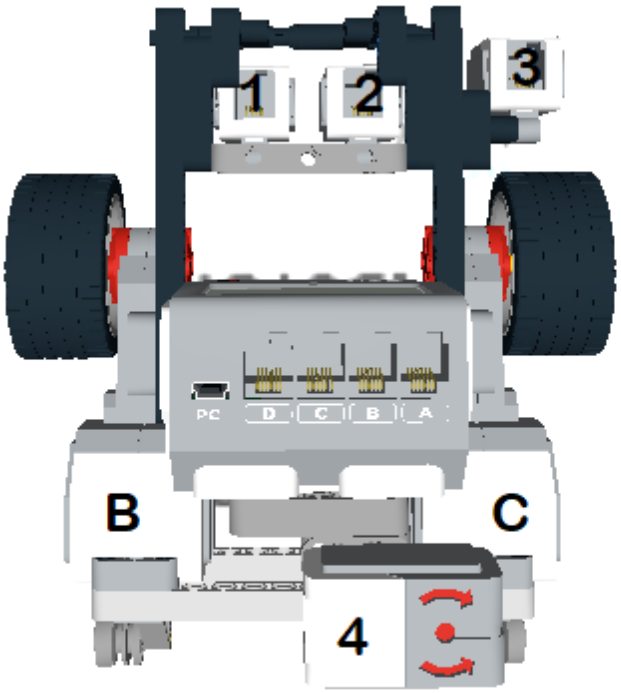
Judging team detected less than 1% of the users have a PC issue where the time result it submits take out the decimal seconds.
Example:
Real time result: 00:55.230
Submitted time result: 00:55.000

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

Remember if you are on 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.

Robot Ports

***Remember, is not allowed import a new robot.**



Robot Missions

The robot must move the fallen trees to the target areas which are the wastelands.

The robot must move the water tank to the target area in front of the school.

The robot must move the mega powerpack to the target area in front of the residential area.

The robot must move the medical kit to the target area in front of the hospital.

The robot must move the electrical power cable to the target area in front of the power plant.

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/TOMYO1vshlM

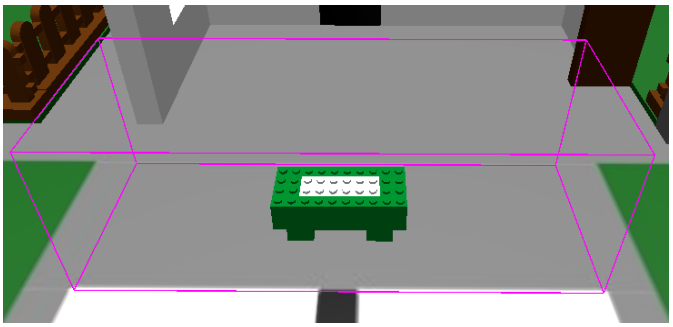
Score

Elementary Advanced Category Windstorm- Virtual Village	**Each**	**Total**
Remove the fallen trees		
Fallen tree moved and inside of the wasteland	**10**	**20**
Bring the emergency supplies to the target areas		
Supply delivered completely in a **correct** target area	**20**	**60**
Restore electrical power		
The **white end** of the electric cable is delivered completely in the correct target area	**10**	**10**
Park the robot		
Robot stops on Finish Area and simulation stops. (only if other points are assigned)	**10**	**10**
Maximum Score		**100**

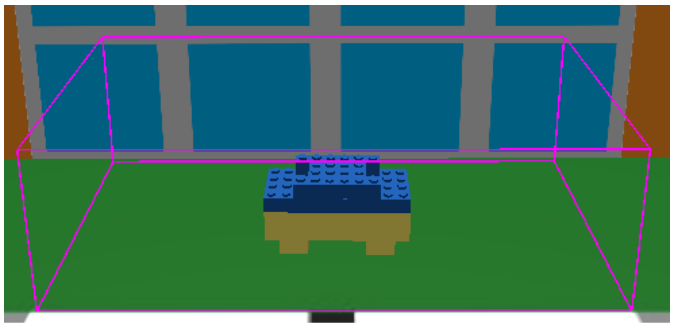
Scoring Interpretation

Fallen tree delivered completely in the **correct** target area. It is important the object to stay completely inside the area. The first fallen tree must be delivered into the first wasteland.

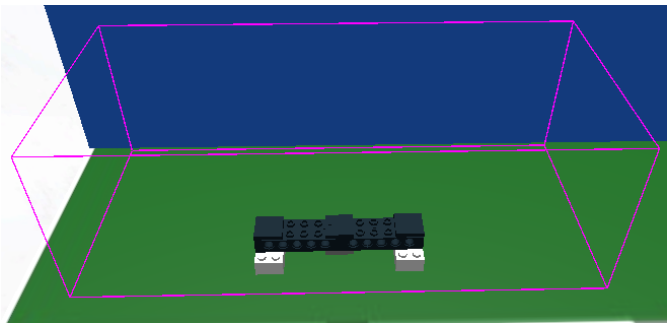
Fallen tree delivered completely in the **correct** target area. It is important the object to stay completely inside the area. The second fallen tree must be delivered into the second wasteland.



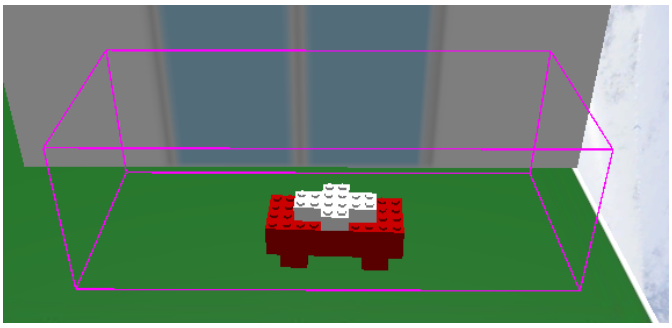
Mega powerpack delivered completely in the **correct** target area. It is not important if the object is standing or lying but it is important the object to stay completely inside the area.



Water tank delivered completely in the **correct** target area. It is not important if the object is standing or lying but it is important the object to stay completely inside the area.



Power cable delivered completely in the **correct** target area. It is not important if the object is standing or lying but it is important the object to stay completely inside the area.



Medical kit delivered completely in the **correct** target area. It is not important if the object is standing or lying but it is important the object to stay completely inside the area.