



RVG World Championship 2021

Elementary Advanced Level

Aerofarms

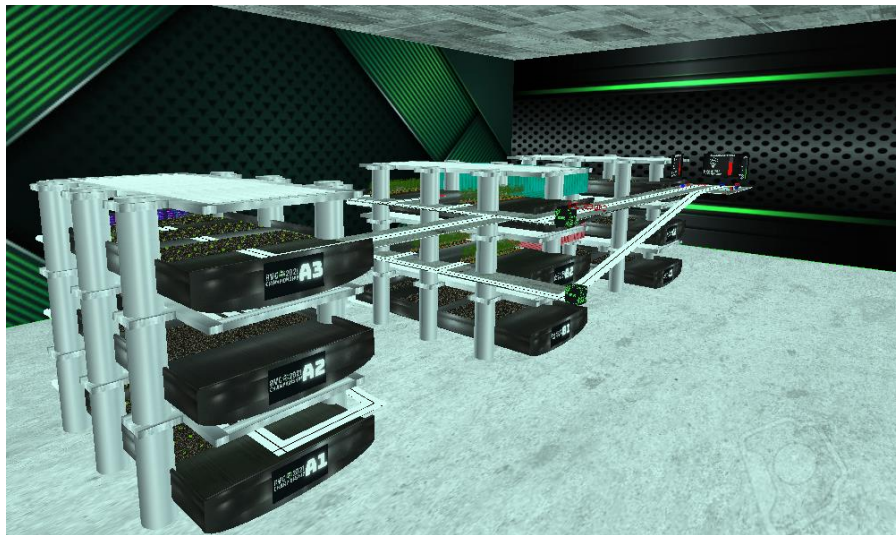


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General Rules

1. All teams must consist of 1-2 competitors.
2. **It is not allowed to make changes in the environment before, after and during the simulation.**
In Advanced level is allowed to import your own robot.
3. **The only change allowed is to import a robot and rotate it within the Start Zone before the simulation starts. This robot can only be a maximum of 30 cm. in width, height and length.**
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's points must be equal, and the time must be equal, or within ± 1 seconds of the best round obtained by the team members and is displayed in the leaderboard.

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 RVG 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

Robot Missions

A1:

The robot must move the seeder to the other side of the zone.

B2:

The robot must move the crop inside the container.

C3:

The robot must regulate the climate control (Temperature, Illumination & Humidity).

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/RT70ZBNyE54>

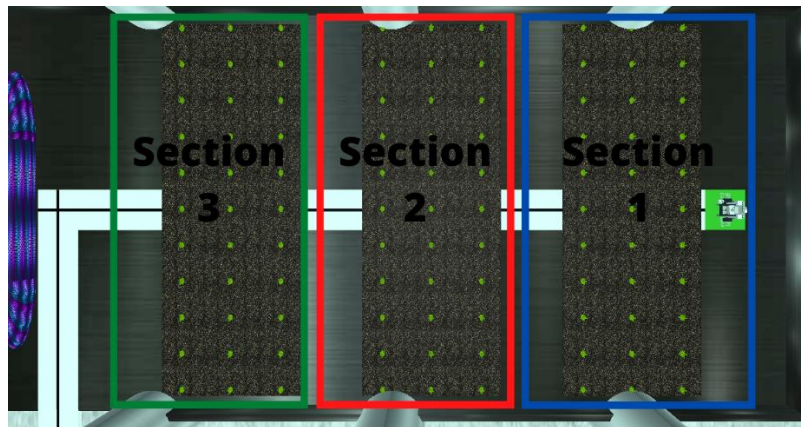
Score

Elementary Advanced Category Aerofarms	Each	Total
A1		
The seeder cross section 1	10	10

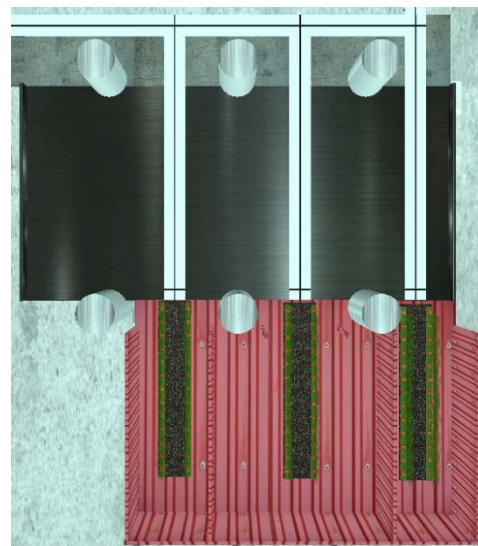
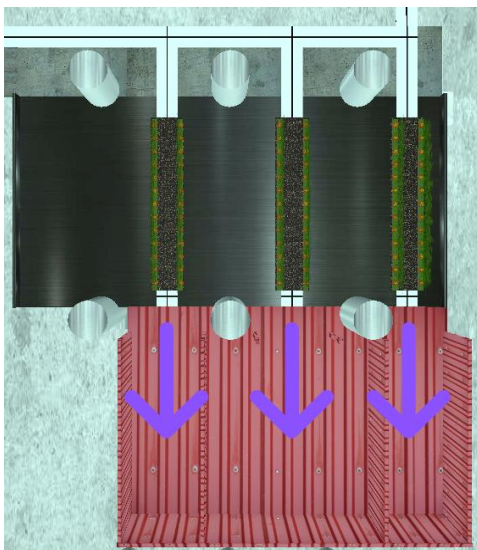
The seeder cross section 2	10	10
The seeder cross section 3	10	10
B2		
The crop delivered completely in the container	10	30
C3		
In the Humidity zone the robot needs to push the red button to regulate it.	10	10
In the Illumination zone the robot needs to push the blue button to regulate it.	10	10
In the Temperature zone the robot needs to push the blue button to regulate it.	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

A1



B2



The crop delivered completely in the container.

C3



In the Humidity zone the robot need to push the red button to regulate it.



In the Illumination zone the robot needs to push the blue button to regulate it.



In the Temperature zone the robot needs to push the blue button to regulate it.



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 them, and the challenge will end allowing you to submit your result.

If the robot is inside the checkpoint, you will not get the point of the final zone.

Important Information

Competition starts 24 SEPTEMBER 2021 - 12.00 AM - MALAYSIA TIME

The end time to **submit results** is 30 SEPTEMBER 2021 - 11.59 PM - MALAYSIA TIME

The end time to **fill the form** is 1 OCTOBER 2021 - 11.59 PM - MALAYSIA TIME

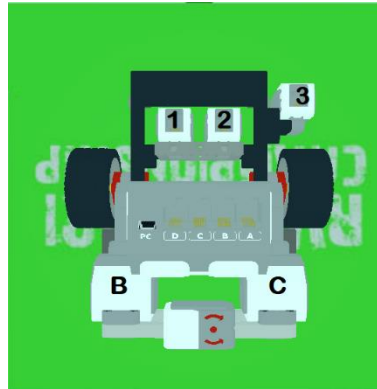
If a top 20 participant doesn't fill the form will not receive the special certificate and any prize.

Robot Ports



Advanced Level: *Remember, it is allowed import a new robot.

On this link you can find the robot on LEGO® Digital Designer or Studio 2.0

<https://drive.google.com/drive/folders/15fNa3YkdHozY7Twx9PdRw6aVTUVnF5Cf?usp=sharing>




Tie Result

18	 Team 1 Sarawak, MY	2021-07-03	4	20	00:22.549
18	 Team 2 CDMX, MX	2021-07-13	5	20	00:22.549

If two or more teams have the same result on the leaderboard, the judging team will review the next highest results of the participants.

When the judging team finds out which team got better results, they will take out 0.001 seconds from the time on the leaderboard of the team winner team to tiebreaker the result.

On the example "Team 2" got a second better high score, it means we will take 0.001 seconds of the team time result.

18	 Team 2 CDMX, MX	2021-07-13	5	20	00:22.548
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19



Team 1
Sarawak, MY

2021-07-03

4

20

00:22.549

If one of the teams only have 1 submitted result the other team 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 a team has any participant with this issue, the participant needs to fill a special form where they will share a video of the solution and we will exchange with the time displayed in the video.

-The video needs to have the same "Recording Details" as the "Top 20" video.

-The difference between the submitted time result and video time result only could be decimal seconds, it means that the minutes and seconds need to be exactly the same.

Example:

Submitted time result: 00:45.000

Video time result could be only between 00:45.001 and 00:45.999. If the video does not comply with the above rules or the participant does not fill out the form to send the video. The decimal seconds of the submitted time will be changed to "X.999".

Example:

Submitted time result: 00:37.000

New Submitted time result: 00:037.999

Difference from the Real Time Result Form:

<https://forms.gle/r19odVPQ3xvxPNMf7>

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/s9xnsi6ditM>

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.

-Participants must place their Team name in the virtual brick or in the name of their code.



-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

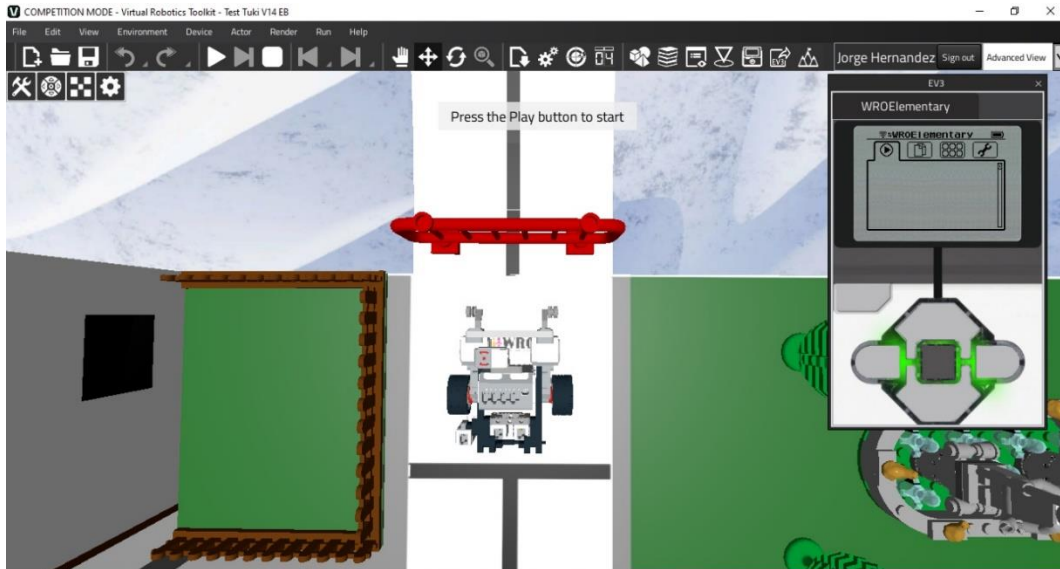
Simple Mode



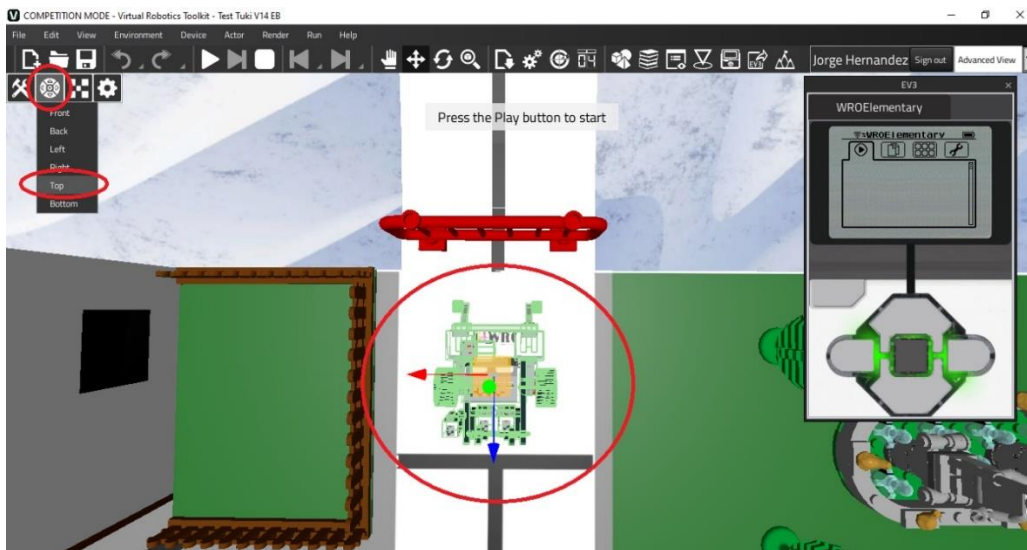
Advanced Mode



2) Move the Virtual EV3 Brick.

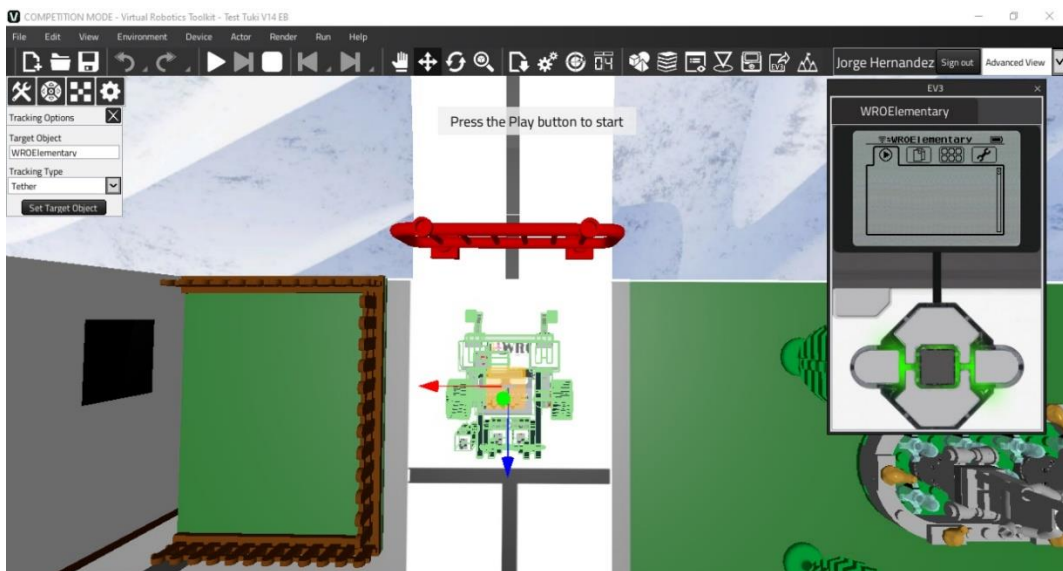
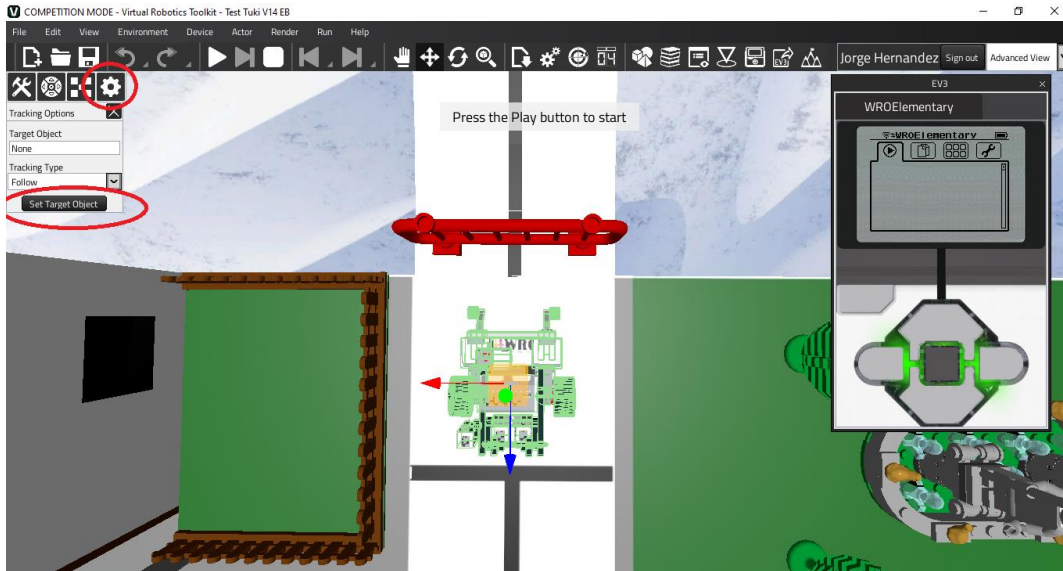


3) Select the robot and use Top Camera.



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 Top 20 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.

<https://forms.gle/2KsmFUyyoginxn647>

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