



Credit photo Instagram @SageWatson @AthleticsCanada

2-Meter Hurdles (2021)

Version 2.0
September 2020

SITUATION:

This is the shortest hurdle race ever seen. Barely 2 metres to cross as quickly as possible with 3 hurdles to jump and clear.

Will you be able to meet this challenge?

May the fastest one win!

Note: Changes versus version 1.0 are highlighted in yellow.

Overall function of the robot

You must design a robot athlete capable of running a distance of 2 metres over hurdles.

Two levels of difficulty are possible, White and Black, the latter with higher hurdles but with the same distance to go.

Challenge	WHITE	BLACK
2 meters hurdles	3 hurdles 5 cm high (4.8 cm)	3 hurdles 10 cm high (9.6 cm)

Description of the robot

The robots participating in the challenge must respect the following constraints:

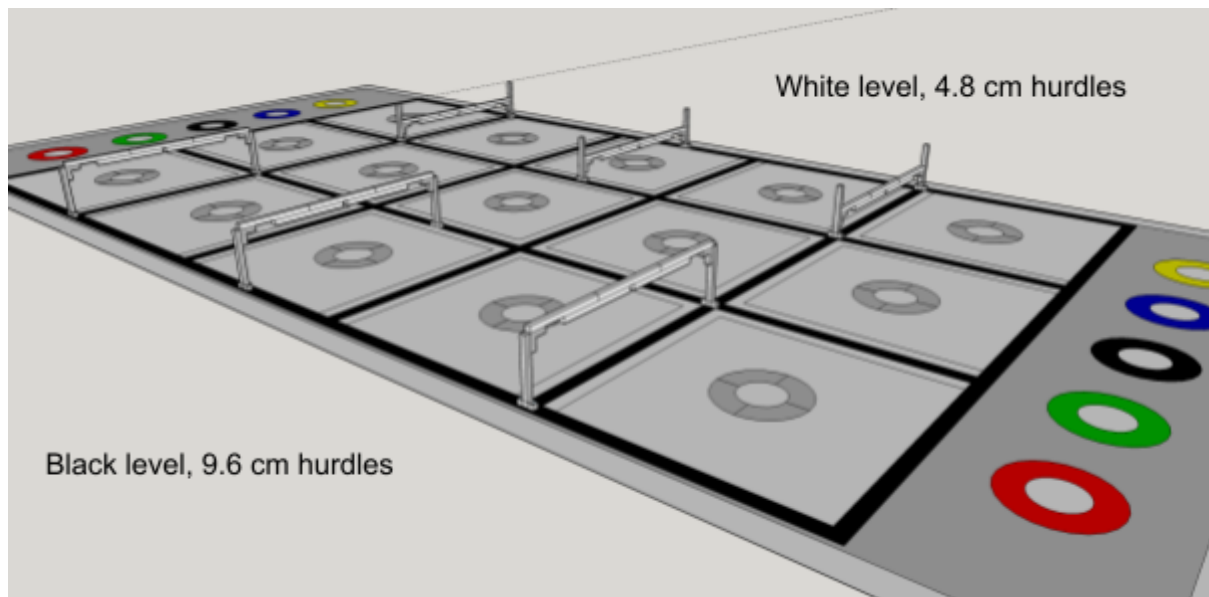
1. Maximum robot dimensions at the start : 30 X 30 X 30 cm
2. One single controller (e.g. EV3 brick, Spike Prime)

Description of the playing field

Surface used: Z01-H mat

The mat is not mandatory to practice, lines can be drawn on the ground to identify the location of the hurdles.

3-dimensional view



The white squares measure 35 X 35 cm. The black lines are 2 cm wide.

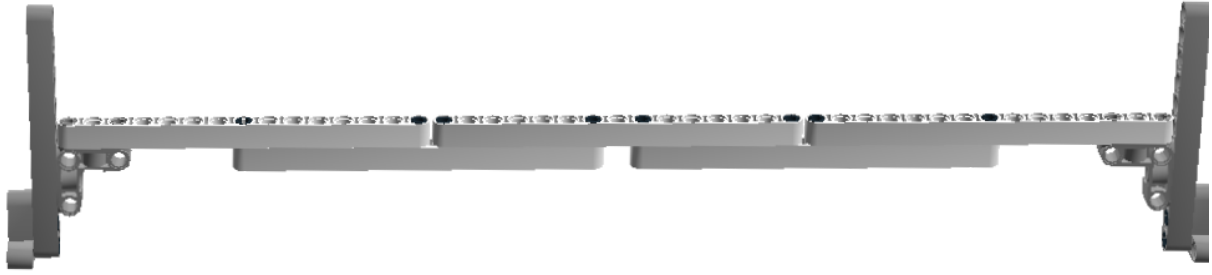
Description of the accessories

Building instructions: <https://www.dropbox.com/s/pn51811i86djp26/Haies.lxf?dl=0>

Hurdles:

Hurdles are made from LEGO Technic parts. The horizontal section is made of 5 beams of 15. T-beams support the hurdle and ensure its stability. The same parts are used to create both hurdle heights.

5 cm (4.8 cm) hurdle, white level



10 cm (9.6 cm) hurdle, black level



Detailed description of the challenge

The robot is installed in its starting position, e.g. touching one of the red or yellow circles.

At the judge's signal, the robot starts to move and crosses the playing field as quickly as possible, "jumping" (not really jumping!) and clearing the hurdles.

The race ends when the controller (e.g. EV3 brick) reaches the last black line or when the time is over (**max 2 minutes**).

The following behaviours may result in the robot being disqualified for the round:

- **Deliberately** make the hurdles fall without trying to clear them
- Pass one or more parts of the robot beside or under the hurdle
- Get out of the race corridor

Surprise rule

A surprise rule could be announced to teams on the morning of the competition. It would allow them to accumulate additional points.

Scoring table

	Max points
Number of hurdles completely cleared still standing (25)	75
Number of hurdles completely cleared but fallen (9)	27
Robot reached the finish line after trying to clear the hurdles	15
Surprise rule if applicable	10
Total	100

Time will be used to rank teams with the same score. In case of a very close result, the judges reserve the right to organise a race with 2 robots at the same time.

Visuals of the scoring system

Touching a yellow or red circle at the start



Reaching the finish line

