
# Sprint Race

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Challenge Manual 2019

## 1 Eligibility

1.1 Participants must be between the ages of 8 to 16 years old as of 31 December 2019. (open to Primary and Secondary students)

1.2 The minimum number of participants per team is 1.

1.3 The maximum number of participants per team is 3.

## 2 Game Objective (s)

2.1 The aim is to build and program a robot to follow a line in the fastest timing

## 3 Playfield Design

3.1 The playfield dimension is 180cm by 300cm.

3.2 The material of the field will be printed on PVC banner material

3.3 The line is 20mm thick.

3.4 The playfield has 2 sections Area 1 and Area 2.

3.5 The start and end of each area is demarcated by the perpendicular lines.

3.6 In Area 1, there is a ramp that the robot must overcome.

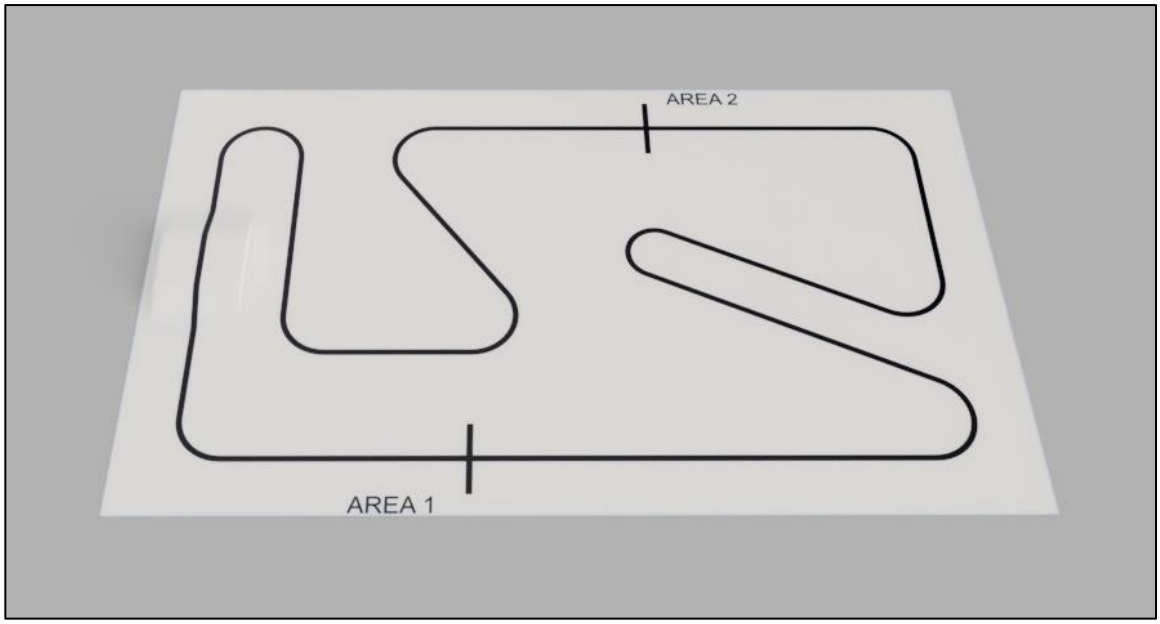


*Figure 1: Playfield map sample*

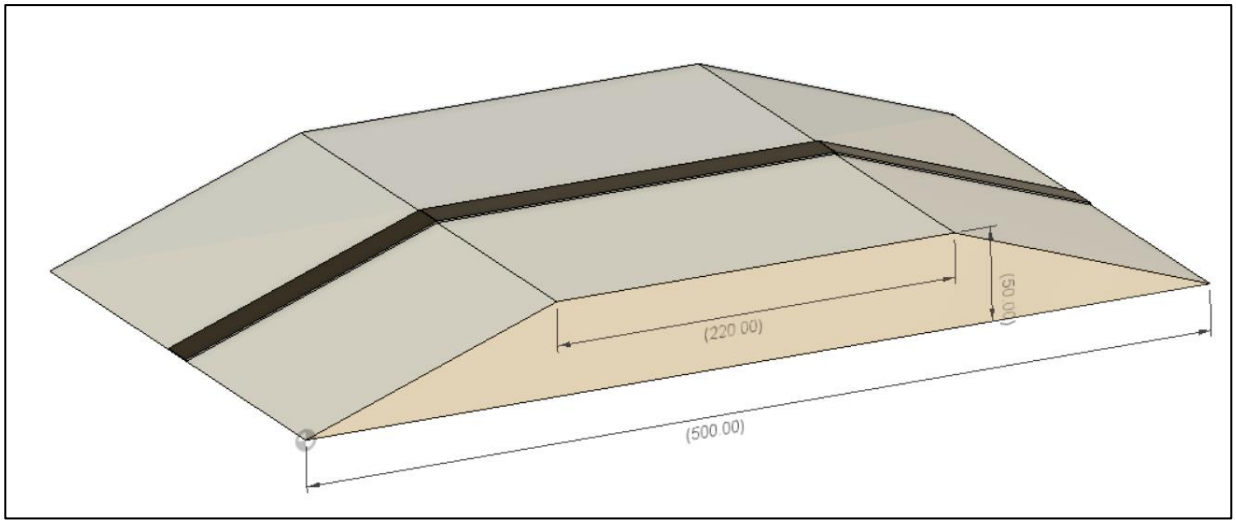


*Figure 2: Ramp dimensions*

## 4 Game Play

4.1 The robot is to follow the line at all times. If a robot is deemed to not follow the line, the timing recorded will be voided.

4.2 The team may choose to complete one of the following during an attempt

- **a.** Complete Area 1 only (robot starts at the line before Area 1)
- **b.** Complete Area 2 only (robot starts at the line before Area 2)
- **c.** Complete Area 1 AND Area 2 (robot starts at the line before Area 1)

4.3 There will be 3 scores that will be recorded.

a. Completion of Area 1
b. Completion of Area 2
c. Completion of Area 1 AND 2 (both area 1 and area 2 must be complete during the same attempt for this to be recorded)

4.4 Robots must start behind the perpendicular line before each area. Timing will only start when the robot crosses the line. Timing will be recorded for completion of Area 1 or Area 2 when the robot crosses the next line. If the team is attempting the completion of both areas, the total timing will be recorded when the robot returns to the first line.

4.5 If there is no timing recorded at the end of the competition period, a maximum timing of 90 seconds and each Area and 180 seconds for the total time is given.

4.6 The fastest timing of will be stored in the system. Teams have unlimited number of tries within the given period to clock their timings.

4.7 If the timer is falsely triggered at the start or finish line, the team will have to restart their run.

4.8 Teams will be required to scan their tag at the counter before running their robots.

4.9 After each attempt, students will be required to join the queue to have another attempt. Students are not allowed to queue without their robots.

4.10 Students are allowed to modify or improve their robots after each attempt.

## 5 General Rules

5.1 The size of the robot has to be within 250mm X 250mm X 250mm when fully extended. Teams whose robots do not conform to the given dimensions will be asked to make changes to their robots.

5.2 Any official LEGO part (brick, Technic) is accepted

a. There is no limit to the number of parts used.
b. No modified parts are allowed.

5.3 Each robot will have to go through inspection to before running their robot on the playfield.

5.4 The referees have the right to disqualify any team that shows defiance or unacceptable behaviour, including inappropriate words and/or behaviour towards other teams, audience members, referees, or organizing committee members.

5.5 The referees will have the final say in any dispute.

5.6 Strictly NO sharing of robots with other teams. Teams found to be sharing robots will be disqualified.

## 6 Awards List

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|---|---|
| Fastest Racer | Champion |
| | 1st Runner-up |
| | 2nd Runner-up |
| Fastest Area 1 | Champion |
| | 1st Runner-up |
| | 2nd Runner-up |
| Fastest Area 2 | Champion |
| | 1st Runner-up |
| | 2nd Runner-up |
| Most Aerodynamic Design | Champion |
| | 1st Runner-up |
| | 2nd Runner-up |
| Best Mechanical Design | Champion |
| | 1st Runner-up |
| | 2nd Runner-up |

*Last Updated: 16 Sept 2019*