



RoboSensei
Simulate Download Play

RoboRAVE
International
A Collaborative Robotics Program

RoboRAVE International

ONLINE 2021

Virtual Challenge Rules

RoboRAVE is very proud to partner with RobSensei to offer our challenges virtually. Where students can learn by Simulating... Downloading... & Playing

Registration: In general, participants can register a team through the RoboRAVE International website at www.roboraveinternational.org On occasion, Event Directors may choose to have teams register through their specific websites.

Teams: RoboRAVE International has made the decision starting in 2021 that “teams” will be Individual based (**for the RoboSensei Platform only**). If you want to compete in more than one challenge, simply register another team.

Note: *Some events require only one registration fee for all divisional RoboSensei challenges; in that case you need to complete only one team registration in your division challenge and we will enroll your team in your division.*

ROBOSENSEI CHALLENGE FORMAT:

The format of our RoboSensei challenges is 100% online. Open the challenge, code your robot to complete the challenge, run your code for your virtual robot, and compete against all the other teams/players. Your score is automatically posted on the event’s leaderboard (link at the top of the RoboSensei Welcome Page. **SAVE YOUR PROGRAM** so we can verify your program, and score, if needed!!!)

General Play: Teams may compete as often as you want during the event’s General Play period. Always **SAVE YOUR PROGRAM OF YOUR BEST SCORE!!**

CHALLENGE AND DIVISIONS:

Divisions: As a general rule of thumb, the following divisions are defined on the the RoboSensei platform: Elementary School (8 to 10 years); Middle School (11 to 13 years); High School (14 to 18 years; and the University/Professionals (19 years and older). *Occasionally MULTIPLE DIVISIONS, such as ES & MS, or HS & UP, may compete together in a Combined Division. This will be noted BEFORE YOU REGISTER.*

Challenges:

- **Arrows** - for grades 1 - 3 ONLY. Use of directional arrows to introduce graphic coding
- **a-MAZE-ing** – Typically open to Elementary School and Middle School divisions only
- **FastBot** – Typically open to all divisions
- **Line Following** – Typically open to all divisions



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Note: Event Directors can determine which challenges to offer for their event, and which divisions are offered for each of the challenges.

SCORING:

RoboSensei Challenges are scored automatically by going over, in ORDER, the small, numbered bubbles along the challenge track. Some challenges are also timed events.

TIME BONUS - IF, and ONLY IF, the robot completes the track in less time than given, THEN the remaining WHOLE seconds are added to the final score.

VIRTUAL CHALLENGES:

Arrows NOTE: For players in grades 1 - 3 (typically 5 - 7 years old)



Goal: Pick up all items BEFORE going to bed. Each item has equal points but if you get to bed BEFORE time expires, then each whole second remaining will be added to the final score.

Coding: ONLY directional ARROWS are permitted but the order is up to you to find the best path to bed.

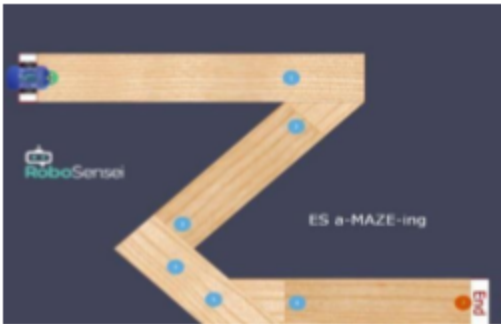
ARROWS: Each direction can be set for 1-5 moves.





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a-MAZE-ing NOTE: NO EXTERNAL sensor is ALLOWED throughout the track



Code a virtual robot to follow a MAZE from start to finish as fast as possible earning points along the way. A Time Bonus consisting of the remaining elapsed time will be added if the challenge is finished before time runs out.

ES a-MAZE-ing Example Track:

Fastbot NOTE: Use of an IR sensor is REQUIRED throughout the track

Code a virtual robot to follow a closed (racetrack style) line-following track from start to finish as fast as possible. The division tracks could include 0-3 intersections.

Fastbot Race Laps per Division:

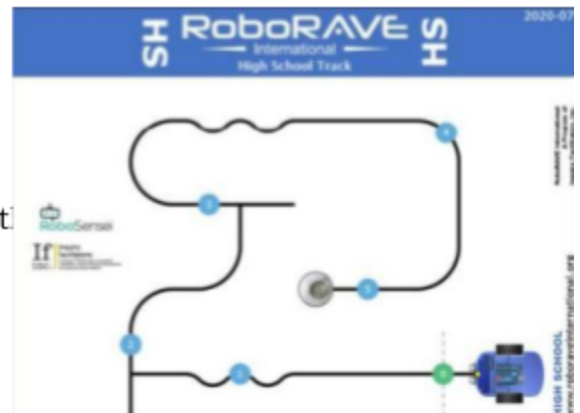
- Elementary School Division = 2 laps
- Middle School Division = 3 laps
- High & UP Divisions = 5 laps



Line Following NOTE: Use of an IR sensor is REQUIRED throughout the track

Code a virtual robot to follow a Line from the "Home" position to the "Tower" position and back to the "Home" position as fast as possible earning points along the way. A Time Bonus consisting of the remaining elapsed time (whole seconds) will be added if it is finished before time runs out.

HS Example Track





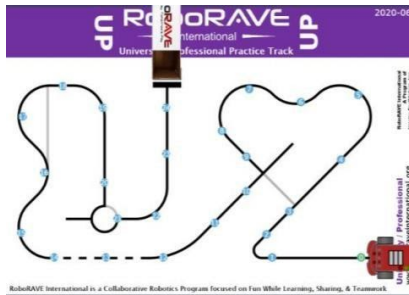
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- ES Division is a thick line with no intersections
- MS Division is a thick line with one intersection
- HS Division is a thin black line with two intersections
- UP Division is a thin line, can contain gray line shortcuts, and or dashed line hazards, and can have multiple intersections.

UP Example Track