

Robot Maze Challenge

In the Robot Maze Challenge, teams will be given a blueprint of a maze with exact dimensions one hour before the challenge. The robot must navigate the maze without human intervention, you are able to use remote control, but cannot touch the robot. Add 50% to the team's final score if the robot can navigate the maze autonomously. Add 25% to the final score if the robot uses a combination of autonomous and remote control navigation.

Rules

1. Teams consist of 2-4 students.
2. Teams must build and design their own robot.
3. Teams can use Vex parts or other controllers.
4. Teams may supplement the robot parts with store bought or student fabricated parts. The cost of additional parts may not exceed \$100. A completed bill of materials with cost should accompany the student presentation.
5. Each robot will compete in three rounds with the best time being considered the official time. Teams can use up to 30 minutes between runs to modify their robot or program between rounds.
6. A 50% bonus will be added to the overall score if the robot is completely autonomous.
7. A 25% bonus will be added to the overall score if the robot uses a combination remote control and autonomous navigation.
8. A blueprint of the maze listing the exact dimensions will be given to the teams one hour before the competition.
9. Scoring is based upon:
 - Quality of the design
 - Safety design and considerations
 - Final operation
 - Workmanship
 - Proof of planning (Engineering notebook)
 - Bill of Materials with cost
 - Final presentation
10. The robot will not be awarded points in the Performance/Final Operation section of the scoring if at any time during the navigation of the course it is handled by a human.
11. Decision of the judges is final and binding.

Assessment Rubric

JUDGING AREAS	Possible Points	Team Evaluation
Quality of the design	50pts	
Safety design and consideration	50pts	
Performance / Final Operation	50pts	
Workmanship	50pts	
Proof of planning (Engineering Design Notebook)	100pts	
Final Presentation	50pts	
Complete Bill of Materials	50pts	
Total possible points	400pts	
Multiplier	_____	
Team score		

Teams competing in this event are required to perform a self evaluation before they present to the competition judges. Use the following as a reference when self assessing:

- 0 - **Not attempted**
- 10 - **Incomplete:** The task was not completed
- 20 - **Needs Improvement:** Task was completed, but not done very well
- 30 - **Adequate:** Task works, but is of average quality
- 40 - **Good:** Complete, high quality, works consistently
- 50 - **Industry Standard:** Complete, excellent craftsmanship, visually appealing, marketable.