

## Autonomous Maze (Field attention): GPI, TI, API

DESCRIPTION: Autonomous programming of the robot.

### Rules

1. Participants will have up to 90 seconds to complete each course.  
**Elementary** must do Rescue Grandma and Planting  
**Middle School** must do Rescue Grandma and Cultivation  
**High School** must do Rescue Grandma, Cultivation, and Planting  
Note: All courses must be completed in 5 minutes for full credit.
2. Participants may modify the robot to assist in completion of tasks.
3. Participants will be given the exact dimensions of the course and the tasks prior to the event so that it can be programmed to complete the tasks.
4. The robot will begin at the starting area of each course and work its way around the course.
5. Participants will be allowed to restart the course as many times as they can during the allotted time.
6. The best score and time will be used for final scoring and ranking.
6. In case of a tie the team that completes the course in the shortest amount of time will be the winner.

**Three courses - see map.** Each square represents 1' X 1', Each field represents 10' X 10'.

1. Once the robot begins a course, it should not be touched. If the participant chooses to move the bot for slight course modification the student must inform the judge of the movement and the judge will make the adjustment, the following penalties will be enforced. All wheels must remain in contact with the ground. (Judge's discretion)

- Slight course modifications: 1st 20 sec. penalty, 2nd 30 sec. penalty, 3rd 40 sec. penalty 4th - start over.

2. Participants will have the opportunity to complete the course a second time after all teams have had an opportunity to complete the course. (if time permits based on how many teams sign up)

### Planting:

1. Robot must begin and end at the start/stop box.
2. The robot must make contact with each 2'X2' square to score points. Each square scores a point. 25 points possible.
3. Red lines represent borders that cannot be crossed.

## Cultivation

1. Robot must begin and end at the start/stop box
2. The robot must go 360 degrees around each plant for cultivation. Each successful plant cultivated yields 5 points. 25 points possible.
3. Each time a plant is bumped or touched is a 1 point penalty.

## Rescue Grandma

1. Robot must begin at the start box
2. The robot must be driven in the blue zone
3. The robot must end in the green stop zone
4. Snow drifts will consist of packing peanuts and bubble rap. Robot must drive around frozen pond.
5. Team points. Each team will start with 25 points. 1 point penalty for each time robot runs outside the blue area. 1 point penalty will be given for driving through the frozen pond.

