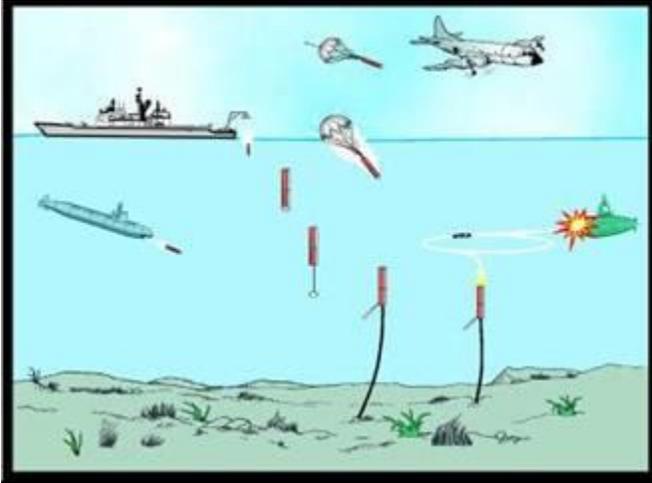


2016 New London 4-H Robotics Minesweeping Challenge

When countries are at war, they sometimes lay mines in the ocean, hoping to sink enemy ships that hit the mines. The mines may be laid from ships or submarines, or even dropped into the ocean from airplanes.



The mines can be hidden under the ocean, or left floating on the surface. If a ship hits a mine and breaks one of those spikes - BOOM!



A minesweeper has the very dangerous job of travelling around an area of ocean known to contain mines, locating them without setting them off.

Robot Minesweeping Rules

The playing field is a piece of plywood with 2x4 lumber sides, making the internal dimensions 93" long by 45" wide. A standard piece of green construction paper will be taped into 2 the bottom right and top left diagonal corners of the playing field, with the long edge of the construction paper aligned with the long side of the playing field. The picture shown below is similar to the design that will be used in the competition, but not exactly the same (in particular the starting and ending box will not be yellow).



The challenge is for your robot to start in the bottom right corner of the playing field (on the piece of green construction paper) and navigate to the top left corner of the field (on the other piece of green construction paper), in less than 2 minutes, without detonating any mines.

Mines will be distributed around the playing field in a manner that prevents a direct path between the corners. Mines will be 18oz red Solo cups placed upside down on a 6" yellow circle made of construction paper. The positioning of the mines will be determined immediately prior to the start of the competition by a non-participating 4-H member.

Your robot must be capable of detecting the mines and adapting the robot's travel path without simply driving a pre-programmed route.

Mines will be considered “Hit” if any portion of the robot touches the solo cup as determined by the judge.

The robots must be designed and built using your own ideas and no pre-published directions

Robots can be designed and programmed by a whole club, in teams, or individually

Judging criteria:

Time limit is 2 minutes.

Each robot will navigate the field with the same layout of mines.

All robots that are successful in transiting from the bottom right green box to the top left green box, without hitting any mines, move to the next round.

The entire robot does not have to be contained on top of the green finish box, but must be over a portion of the box. A portion of the robot extending over the green box is sufficient or the robot may be physically on the paper.

Additional mines will be added to the playing field for each round of competition.

The winner is the robot who completes the transit, within time, with the most mines on the playing field.

If multiple robots are eliminated in the same round, the robot who survived the longest prior to hitting a mine will win. If a robot survives the entire 2 minutes without hitting a mine, but has not reached the green finish box, that robot does not progress to the next round of competition, but would finish in the placing higher than a robot who hit a mine during that round of competition.

The actual playing field will be at the 4-H fair during the weekend and competitors are allowed to use the field for practice with their robots. Contact Alex Sawyer, Robotics Superintendent, during the fair to practice on the playing field.

Questions can be submitted to rob@thesawyerfarms.com for clarification.