

LEGO Mindstorms Landslide! Rules

Save the people trapped in a landslide with your Search and Rescue robot!

Description

The object is for the robot to rescue people trapped in a landslide. The robot must start at home base (HB), travel to each of the four rescue locations (marked on the Arena Specifications map with x's), and identify what is at each of these locations. If it is a human (represented by a red, 1" diameter gumball), the robot must bring it back to home base. If it is landslide debris (like trees or rocks, represented by a purple, 1" diameter gumball), the robot can ignore it or knock it out of the way. The time stops when the robot returns to home base (and is completely within it) with both humans. Note that competitors may initially position their robot any way they choose, as long as it is completely within the home base.

Levels

Beginner: the locations of the two humans and two pieces of debris are exactly as marked on the Arena Specifications map, though you won't know until the competition day which are humans and which are debris. Your robot must bring both humans back to home base within three minutes, and you can't touch your robot once the time has started.

Advanced: the locations of the two humans and two pieces of debris will be random, so your robot has to actually go looking for them. These robots must be fully autonomous, but have up to three minutes to rescue both humans.

Categories

The categories available at each level of competition will depend on the ages of entrants, where mixed-aged groups must enter in the category appropriate for the OLDEST team member. Assuming entrants range from Grade 4 and up, categories will be as follows:

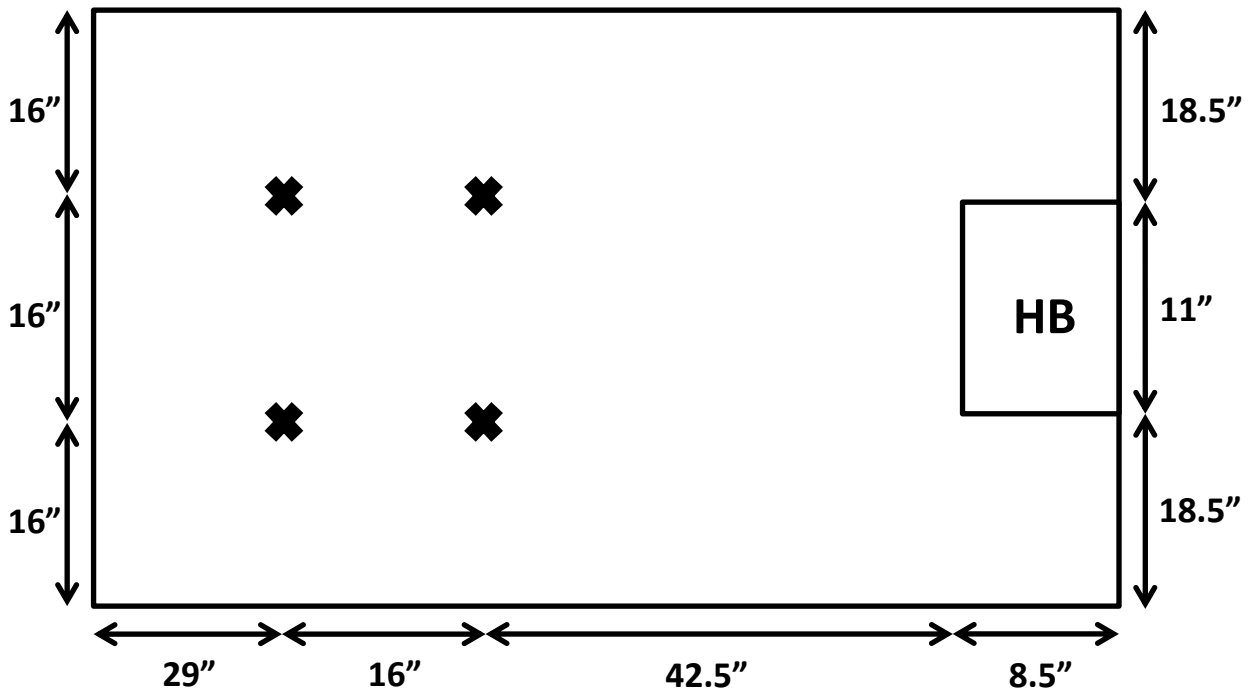
- Beginner – open to students up to and including Grade 6
- Advanced Kids – open to students in Grades 4 through 8 inclusively
- Advanced Open – open to students up to and including Grade 12
- General Open – open to anyone

Robot Specifications

Each robot must be constructed from one LEGO Mindstorms kit and must have a footprint no larger than (i.e. fit inside) home base, which is equivalent to a standard letter-size piece of paper, 8.5" by 11".

Arena Specifications

The arena's dimensions (not to scale) are as shown in the diagram below, though the four rescue locations marked with x's are only accurate for the Beginner level. Please note that the 1" diameter gumballs representing both **humans and debris are set on top of one lifesaver candy each** so that they don't roll and are easier to pick up! The area boundaries are actually 4.5" high boards.



Scoring

1. For each human you successfully bring back to home base (it's okay if they roll out once they've been set down, as long as they were initially put down within home base), you get 50 points. Note: you don't have to pick up the lifesaver under the gumballs.
2. For each piece of debris you remove from the arena (the debris has to actually leave the arena boundaries) you get forty extra points.
3. For every second you finish under three minutes, you get one extra point. Time stops at three minutes; if you are not done you get to keep whatever points you have up to then but do not get to continue.