

RoboFest Hawaii 2007 Competition Rules • Oct 3, 2007

• Volcano Challenge

Robots must drive over a simulated printed lava field (supplied in advance for practice), search for lava vents, and deploy an instrument package onto them.

Competition:

Robots must operate autonomously, with no human intervention on the lava field after being started. Robots may drive off the lava field into a safe zone denoted by a black border, at which point they may be handled by humans (reconfiguration, reloading of instrument packages or reposition departure point in safe zone).

5 minute time limit per run, two runs per team, adjustments permitted between runs

Competition classes:

* Student Class (14 and under, stock Lego parts only)

* Open Class (15 and older, using any robotics platform)

Playing field:

42" x 96" inkjet printed on matte white polypropylene material

Lava landscape printed with a 1" black border (safe zone)

Vents are represented as foil circles (1.5"-2.5" in diameter) overlaid on landscape

Vents will be placed randomly around the playing field

(practice fields may NOT be representative of official field)

Vents may have red (hot) lava flows radiating from them to help robots find them

Instrument package:

Standard sized white poker chip: 1.5" dia, 1/8" thickness

Event will use Cardinal brand chips available from Walmart

Scoring:

Find and rescue (carrying or pushing) a stranded hiker to safe zone = 25 points

Find small vent and deliver instrument directly on vent = 15 points

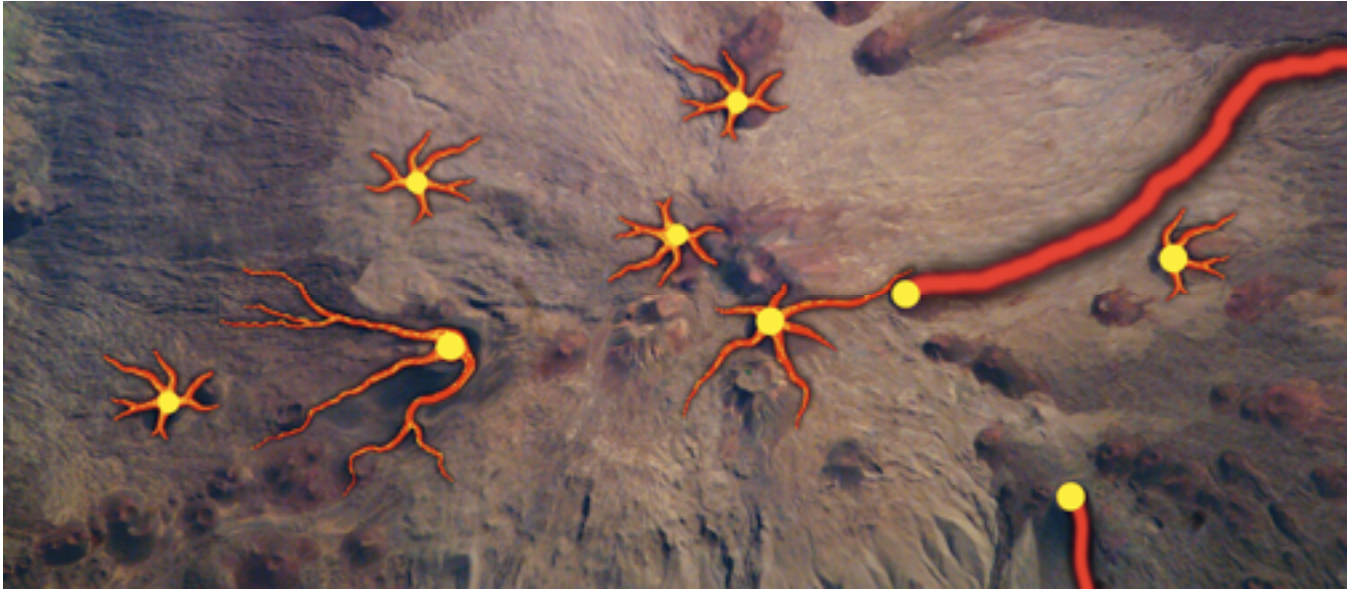
Find large vent and deliver instrument directly on vent = 10 points

Find the vent and deliver instrument within one diameter of vent = 5 points

Running over a vent = -5 points

Scoring will be made at the end of the run. Instruments accidentally moved off or away from vents will be scored on their final resting position.

Robots may reload an instrument package by moving into any safe zone (a safe zone is any area on the perimeter of the field), then starting from that same point



Registration will include a practice playing field that will be sent to you.

This is a scaled-down version of the 2007 RoboFest Hawaii Volcano Challenge playing field for both Student and Open teams. The full size playing field is 42" x 8', and are printed on a polypropylene poster material in full color. The yellow dots depicted here will be covered with aluminum foil tape. Measured reflectivity response from Lego Mindstorms light sensors are as followf:

Ink color	RCX	NXT
Silver foil	64	67
White	54	50
Yellow	52	51
Red	50	50
Black	40	39

There will be a black border around the lava (playing) field that will signify the safe zone. Robots may not be handled until after they enter the safe zone (where at least one wheel or a portion of the robot is directly over the safe zone).

Once in the safe zone, robots may be reconfigured with apparatuses or downloaded code, and redeployed from the safe zone at any point around the playing field.

The stranded hiker will be a Lego figure placed in a random location on the lava field.

NOTE: A practice playing field will be shipped to you upon receipt of your registration