Canada and the Niagara Region is facing a tradesperson shortage and we need to train the upcoming workforce to be prepared for the jobs of the future. Your robot will be used as a training tool to aid our young apprentices in gaining the skills necessary to start a successful career once they graduate high school.

Manufacturing Challenge : Welding test

- The Peace Bridge in Fort Erie requires extensive repairs to the steel structure, we need to train our welders to help fix the bridge so it is safe for all passengers crossing over.
- Your robot must move to the welding area to lay down a bead of weld. You will be provided with a dry erase marker and assortment of elastics in order to attach the “welding rod” to the robot.
- There will be three weld testing areas, A straight line, curved line and right angle
- Points will be awarded based on how accurate your weld bead is.

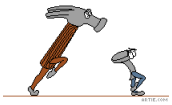
Transportation Challenge: Daytime running lights

- Daytime running lights on your car help to make driving safe for everyone, other drivers and pedestrians will see you coming. The light circuits need to be tested on the cars to make sure they are working properly.
- Your robot will move to the vehicle and flip a switch to test the daytime running lights.
- You will score points based on how many lights you can illuminate.

Hospitality: DSBN Bake off

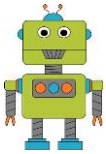
- The clumsy Baker has accidentally spilled the chocolate chips all over the counter. Your robot must collect the chocolate chips and put them into the cookie mix area.
- The chocolate chips will be located at various locations in the kitchen.
- Points will be awarded on quantity, size, and location of the chocolate chips.

Construction : Hammering Nails



- The carpenter needs more practice hammering nails to avoid any further injuries to the fingers.
- Your team will have 90 seconds to set as many nails as possible.
- You will receive points for each nail that pierces the paper .

Engineering Parameters



- The robot must begin the trial in the “Home” area in some cases return to the “Home” area.
- Once a trial has begun there will be no changes made to the challenge board. Game pieces will not be moved, touched or reset during the trial.
- You may only use the materials provided in your Lego kit that you brought from your school. All parts and materials must be Lego brand. Pay close attention to your parts as there will be limited opportunity to obtain replacements.
- Light sensors are not mandatory but may be useful for some challenges.

Trials

- Scoring judges will be located at each station and will monitor the time allotted for the trials and final scores. Each challenge station will have a value of 50 pts.
- Each attempt will be 90 seconds in length, your team will be allowed multiple attempts within the 50 minute challenge timeframe. Your best single attempt score will be used towards your overall point’s grand total.
- There will be approximately 5 teams assigned to a challenge board at any given rotation.
- A master schedule of the team rotations will be available the day of the competition.