

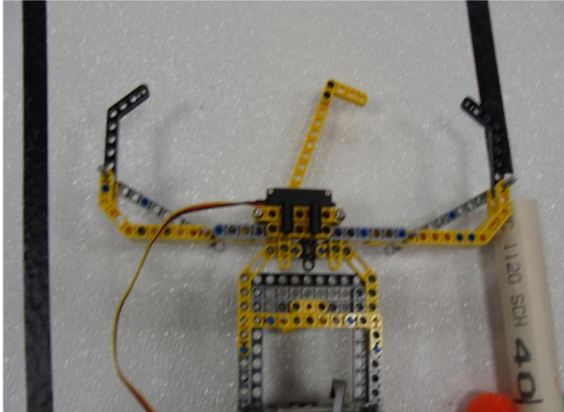
Mechanical Evolution of System Design

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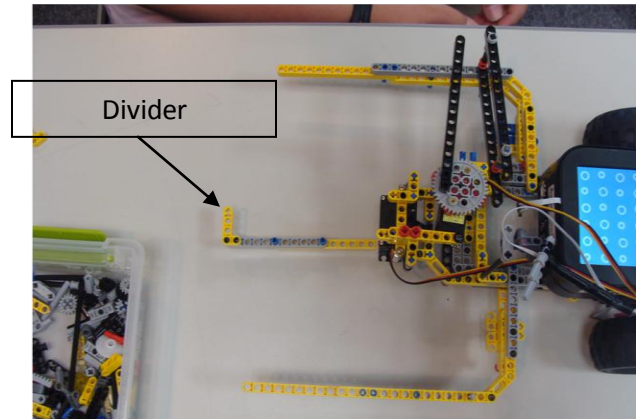
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CBC-Robot

CBC-Robot Claw (Before)

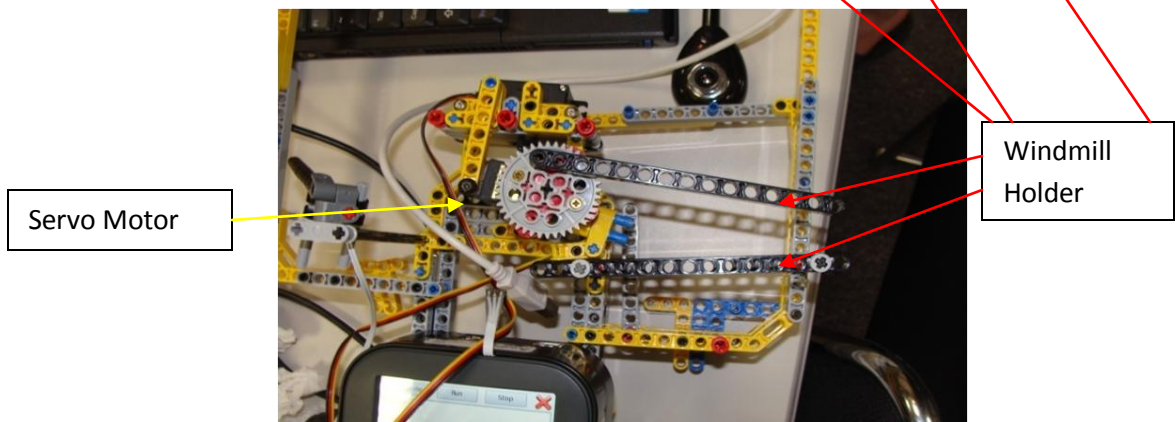
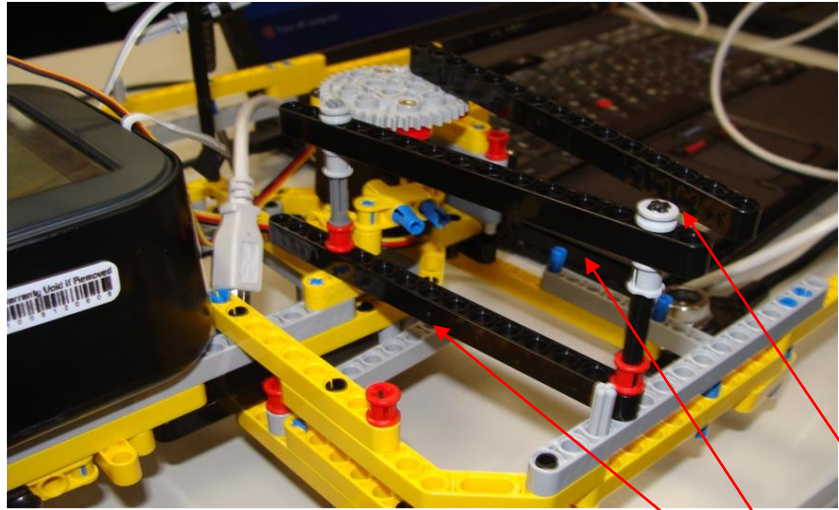


CBC-Robot Claw (After)



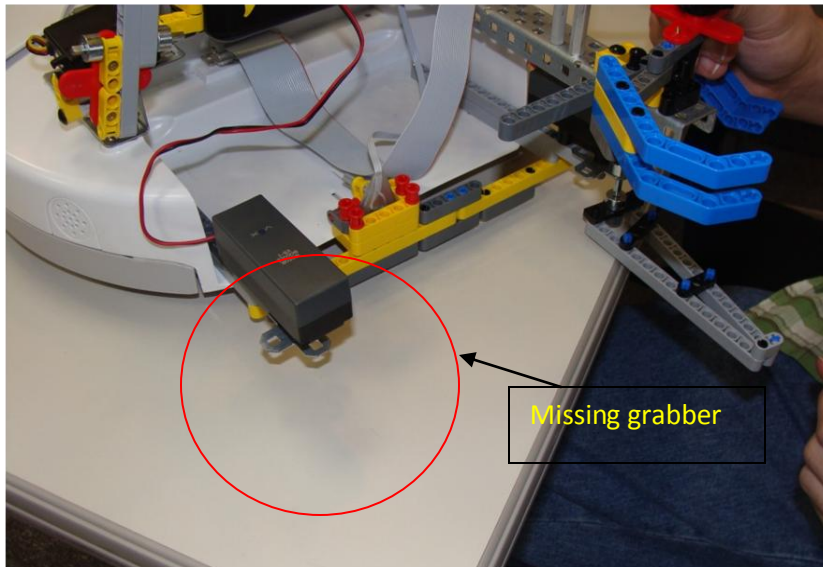
The CBC-Robot's claw changed physically/mechanically over time. We redesigned it because as the robot ran the program, the coupler with the windmill it grasped fell as it went over the bumps on the game board. With this new design, the coupler is in a secure position, and the divider helps keep the coupler in a perpendicular position. Ironically we also solved one of the most fiendish problems in our robot by doing this, its tendency to send the contents of the green fuel cup flying across the board. With the new, larger claw design we found that we inadvertently had stopped the robot from doing this, solving a problem which had been vexing us since we first tested the CBC-Robot. While this solution was admittedly not as elegant as it could be, in our opinion it is an ingenious solution as it has not managed to fail us yet.

CBC-Robot (w/ windmill holder) (after)



We added a Windmill holder, to help keep the coupler that it is holding, perpendicular to the game board. This windmill holder holds the windmill, and the pencil holds the coupler perpendicular to the board as the robot moves around and collects other items. This windmill holder replaced the previous object which used our last servo, the Ball Whacker. The Ball Whacker (not pictured) was a large arm attached to a servo which we used to smack blue balls out of our way to prevent them from interfering with our robot. We decided to change out the Ball Whacker for the windmill holder because the Ball Whacker was not only inefficient, but also often smacked blue balls into the other team's starting box, giving the other team 10 points for each blue ball we accidentally knocked in.

Create Floor Claw



In the period 2 Mechanical submission, we had a photo w/ the grabbers. In that photo there were two pairs of grabbers. We decided to remove one of the grabbers because the robot ran more accurately without the second grabber. While this initially may have seemed to be an extremely radical solution, it was actually a brilliant idea, as it not only increased the robot's efficiency in obtaining cups containing various fuels but also enabled our robot to get close enough to the pipe in the peak to add our windmill claw (not pictured), which is capable of scoring the windmill we start within the foundations at the peak of our hill.