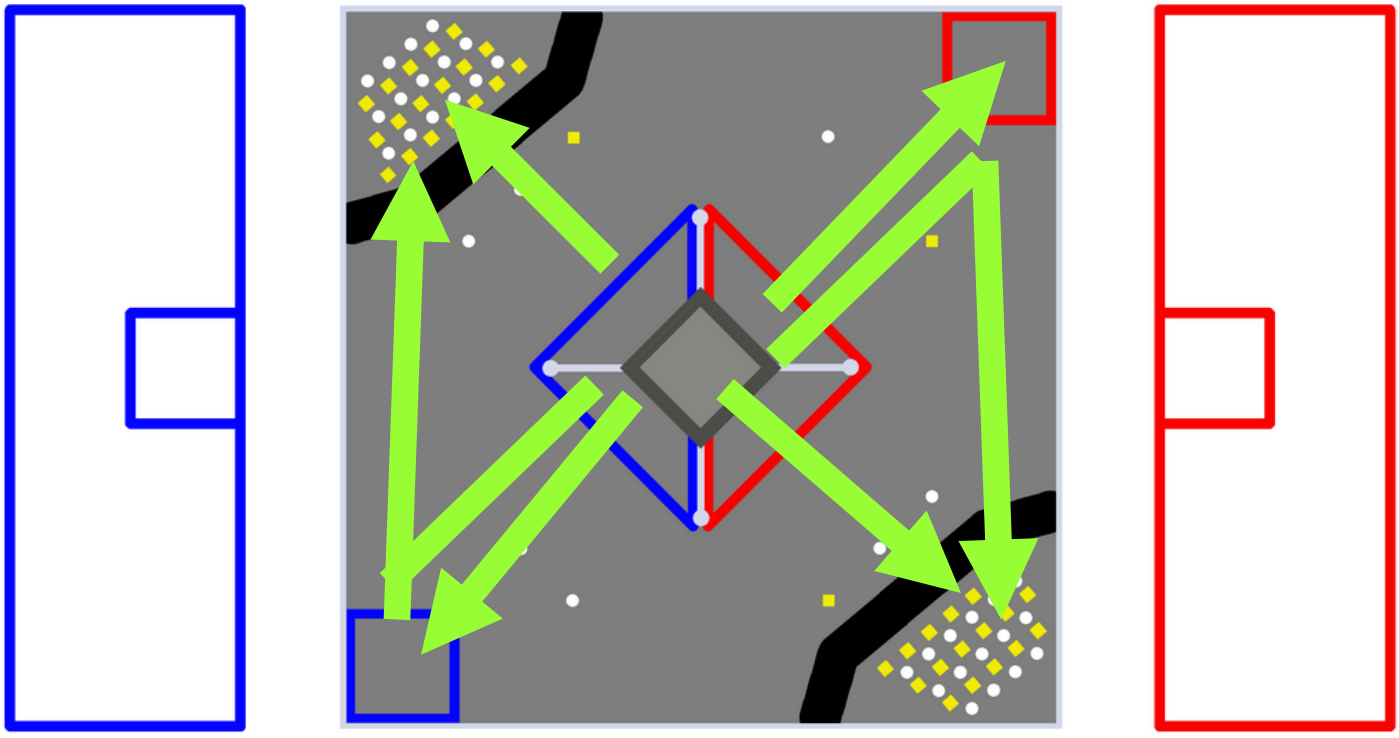
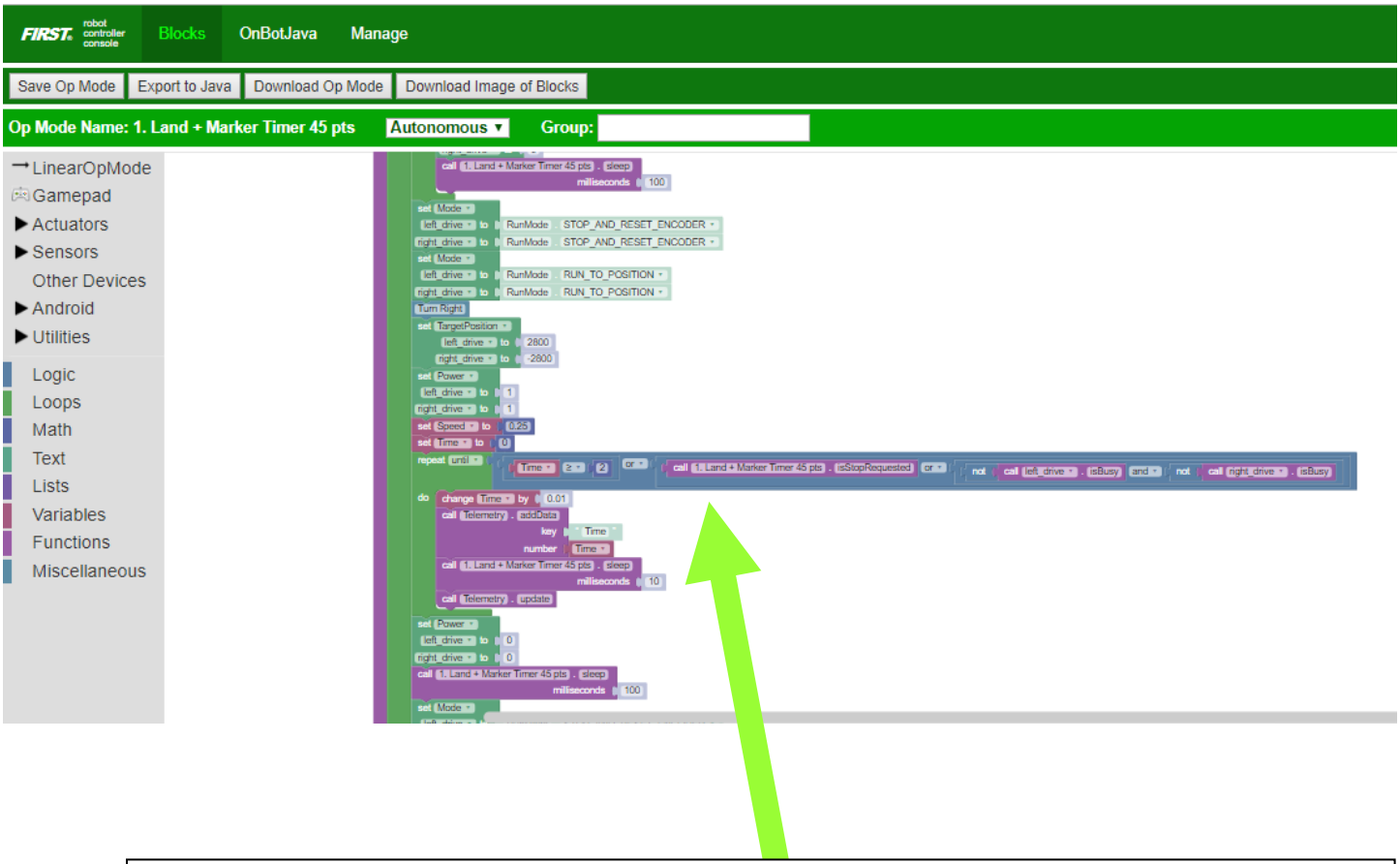
Rover Ruckus
Autonomous Programming

We have five autonomous programs! We have two landing from different starting positions, and three starting from the ground just in case the hook fails.

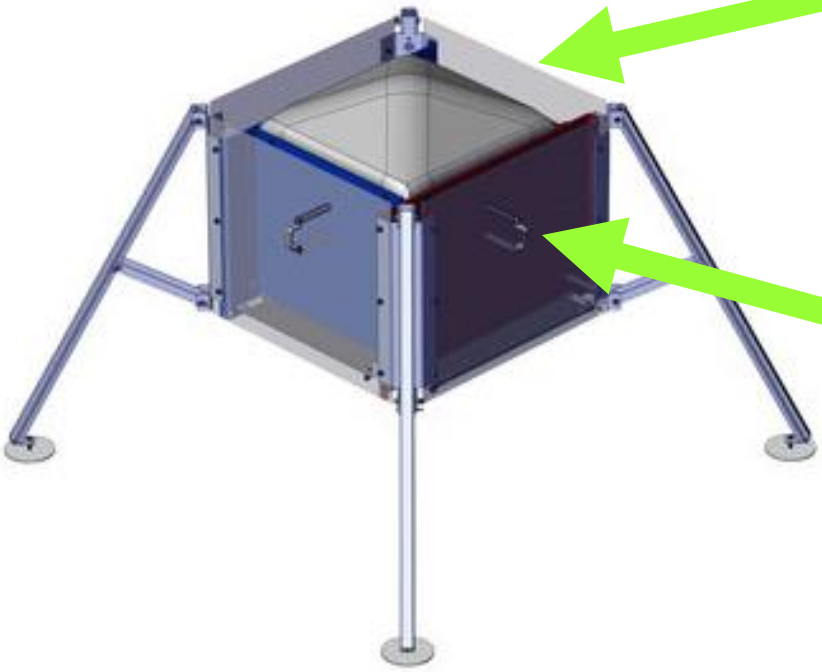
- Land + Marker (45 points): Our robot lands and drops off its Marker.
- Land + Park (40 points): Our robot lands and then moves to the Crater.
- No Land Marker + Park (25 points): Our robot drives to the Depot, drops off the marker, then drives onto the Crater.
- No Land Marker (15 points): Our robot drives to the Depot, drops off the marker, and backs up.
- No Land Park (10 points): Our robot drives to the Crater and parks.





To overcome motor stalls with encoders, we implemented a timer to automatically override the motor movement, in case the motors stall and don't want to move further. While the loop is running, it automatically adds a fraction of a number to a variable, and either the motor reaches its target position or it times out and will move on. We have found this to be very helpful in autonomous programming, and have shared this with other teams who have had this problem, too.

TeleOp



In Tele-Op, our strategy is to score as many Minerals into the Lander as possible. How our system works is that we have a sweeping intake on the backside of our robot which sweeps in Minerals. Next, the Minerals exit on the other side of the robot, and lands in separate buckets attached to servo motors. Then we raise the linear slide and can individually dump the Minerals into the Lander precisely.
We also aim for either End Game Lifting or Crater Parking.

Data Gathering:

With Android Text-To-Speech, we are able to make our robot talk! We use this especially for driver practice, so we can hear the amount of time we have left and which direction the robot considers the front since we can push a button to change its direction. To use the function, simply add a Text-To-Speech Initialize block, then set the language. The next block is the speech block, and then the robot is able to talk!