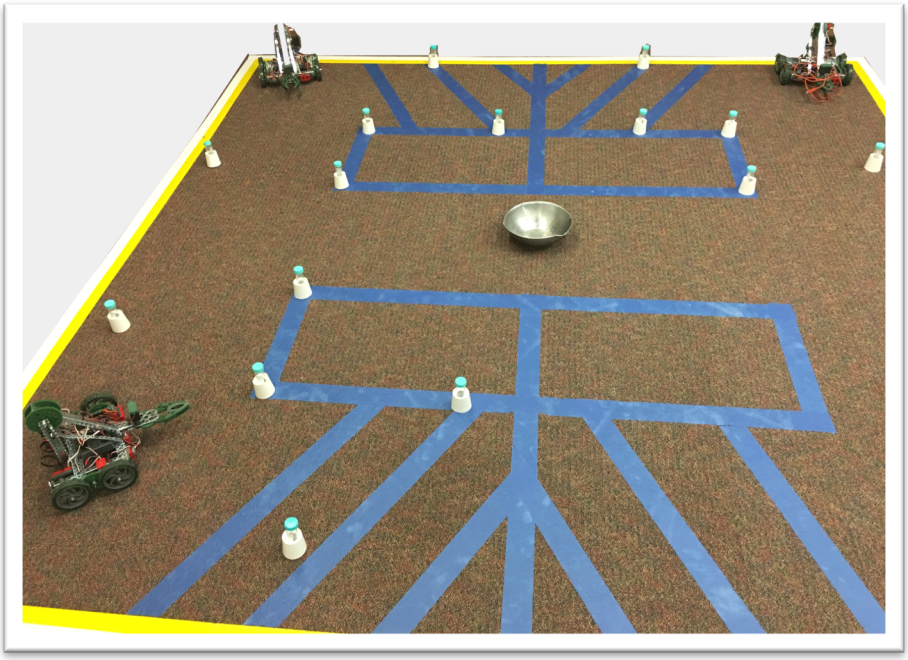
Remote Control Programming - "Minefield Challenge"

Gradesheet – *(45 pts.)*

***Purpose**: Students will learn how to program the microcontroller.*

Remote Control Programming		
Basic Remote Control	Download "Dual Joystick Control". Practice controlling your robot with microcontroller.	5pts
Mapping Values	Save "Dual Joystick Control" as "Minefield Retrieval." Edit the code so that the motor power is sent to half the joystick values (divide by 2). Download and run. Then, create your own mapping…Save/Download/Run.	5pts
Timing	Save "Minefield Retrieval" as "Timed Minefield Retrieval." Edit the code so that the 'While Loop' stops at a specific time defined by you. *(Note: Competition Time = 90 sec.)*. Then add motor commands to stop the robot after the loop ends. Download and Run.	5pts
Remote Button Start	Save "Timed Minefield Retrieval" as "Minefield Retrieval Remote Start." Edit the code so that the joystick controls will not work until you push the button '7D'. Download and Run.	5pts
Controlling the Arm	Save the "Minefield Retrieval Remote Start" as "Minefield Retrieval Arm Control." Edit the code so that when you select a specific button on the remote, the arm will raise and when you select another button on the remote, the arm should lower.	5pts
Stopping The Arm	Edit the "Minefield Retrieval Arm Control" program so that the Arm stops its motion when going up or down when either the Up or Down button is not being selected.	5pts
"Jittery": Conflicting Lines Of Code.	Determine what is causing the "Jittery" control of the robot and then edit the "Minefield Retrieval Arm Control" program to solve this problem.	5pts
Controlling The Claw	Your turn! Edit your code so that you can open and close the Claw!	5pts
Minefield Challenge	While using the remote with the code written above, student teams will compete with each other to successfully lift and place specified number of objects in a container within a specific length of time.. **The winner gets 5 extra credit points.**	5pts



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