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| **TITLE:** |  | | **DURATION:** |
| AUTONOMY ALGORITHM | | | 30 mins |
| **OBJECTIVES:** | | **RESOURCES REQUIRED** | |
| * Describe the algorithm for an Autonomous Bot * Identify how to program an IF statement * Combine the Motor Control and Ultrasonic code * Test Autonomous Bots | | * Robot * Testing Jig * USB-B Cable * Laptop * Batteries | |
| **SECTION** | **POINTS TO COVER** | | |
| **Introduction:** | * Now we have all the skills we need to make our bot autonomous | | |
| **Main:** | * Consider a flow diagram   + We want the code to start and then do whatever we need it to do for the **setup()** function   + Then we want to **measure the distance** in front of the bot   + We want to then check that distance, **is there an obstacle ahead?**   + If there isn’t, just **drive forwards**   + If there is, **stop, rotate, then drive forwards**.   + After all that, **measure the distance** again   + This is how we will build the autonomy loop. This is an **algorithm** * Follow the code walkthrough in document 09a * Once cadets start writing their code:   + Observe and make corrections where needed (but allow to make own mistakes)   + Allow teams to test their bots safely   + Once teams have working autonomous bots, keep their group separate to do more testing | | |
| **Conclusion:** | * End of Day conclusion * Summary of all learning and achievements * Introduce Day 2 | | |