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| **TITLE:** |  | | **DURATION:** |
| ELECTRICAL BUILD | | | 35 mins |
| **OBJECTIVES:** | | **RESOURCES REQUIRED** | |
| * Wire the robot * Develop hand tool skills * Read technical engineering electrical drawings | | * Projected Wiring Drawings * Jumper Wires (M-F, M-M) * Remaining Assembly parts | |
| **SECTION** | **POINTS TO COVER** | | |
| **Introduction:** | * Hand out Electrical Drawings * Describe that teams will now Wire their robots | | |
| **Main:** | * Identify parts of the Electrical drawings   + **Jumper Wires** – These wires are for connecting components     - Male-Male have two pointy ends     - Male-Female have one pointy ends and one pin socket   + **Wire Colours** – Wire colours in the diagram don’t matter, use whichever colours you have   + **Screw Terminals** – To connect some wires to the Motor Driver, cables must be screwed in.     - White Bootlaces are used for the power sockets     - Motor jumpers are used for the motor terminals     - Explain how screw terminals are used     - Once wires are screwed in, give them a ‘safety tug’ to ensure they are properly fixed * Tools   + Cadets will be given the tools they need   + Don’t brief the cadets on how to use the tools, they will figure it out for themselves * Health & Safety   + No Horseplay with tools, they can be dangerous and sharp   + Never push drivers towards your body/hand/someone else – if you slip you will cause harm   + Any dangerous behaviour will be met with removing cadets from the course * Team Management   + Discuss how to make use of everyone in the team     - Building     - Reading the drawings     - Preparing the next step     - Quality Control * Start the build * During the build, ensure all DS are monitoring for:   + H&S Issues   + Teamwork issues   + Incorrect Build (allow to make mistakes but correct where critical) * Once build is complete:   + Assess build Quality   + Collect in remaining wires   + If a team is done, send them away on a break – idle cadets fiddle and cause damage | | |
| **Conclusion:** | * Once all teams are done, take lunch if not already done so. * Explain that next, we will program the Arduino to drive the motors | | |