

Electronics Level 2

Participant Resource Sheet



The Electronics Level 2 badge is designed for participants to extend their knowledge about the wiring, sensors, schematics, motors, motor controllers, control system components and power used in the FIRST Robotics Competition.

This badge is organized into 6 topics. To earn the badge, participants must successfully complete all items in each topic.

Mentors will certify the participant knowledge using the downloadable rubric.

Name: _____

Email used for badges: _____

<i>Topic</i>	<i>Task</i>	<i>Mentor Sign and Date</i>
Wiring	Solder wires appropriately.	
Wiring	Apply heat shrink to soldered wires.	
Wiring	Label wires according to team standards.	
Sensors	Describe the expected behavior of a specific sensor and how it can be applied to a robot function.	
Schematics	Follow a schematic wiring diagram to trace a circuit.	
Motor/Motor Controllers	Wire a motor to a robot subsystem using team's standard operating practices.	
Motor/Motor Controllers	Wire a motor controller to the motor and power distribution panel for a robot subsystem using team's standard operation procedures.	
Control System	Wire / Connect at least 1 component of the control system to another component of the control system.	
Control System	Explain how PWM and CAN communication methods differ.	
Control System	Identify and use the correct tool to insert and remove wires on control system components.	
Power	Explain the components of lead acid, alkaline and nickel-metal hydride batteries	
Power	Explain why lead acid, alkaline and nickel-metal hydride batteries can or cannot be recharged	
Power	Identify relationship between voltage and current.	
Power	Identify how resistance is measured	

Badge Completed Date: _____

Date Submitted: _____