

Electronics Level 1

Participant Resource Sheet



The Electronics Level 1 badge is designed for participants to learn 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. Complete all tasks and review with a mentor.

Name: _____

Email used for badges: _____

<i>Topic</i>	<i>Task</i>	<i>Mentor Sign and Date</i>
Wiring	Describe AWG as wire size and identify team wiring standards	
Wiring	Identify legal FRC wiring standards for current game	
Wiring	Join wires of the same wire size by splicing	
Wiring	Correctly identify and use appropriate tool for splicing / crimping wires.	
Sensors	Identify legal FRC sensors (switch, potentiometer, gyroscope, encoders) and the output type for each (analog/digital)	
Schematics	Describe common symbols on a schematic wiring diagram	
Motor/Motor Controllers	Identify FRC legal motors for the current game.	
Motor/Motor Controllers	Identify FRC legal motor controllers for the current game.	
Motor/Motor Controller	Describe the difference in output between a spike and a motor controller	
Motor/Motor Controller	Identify the publisher and official publication location of technical specifications for FRC legal motors and motor controllers.	
Control System	Identify components of the control system including: roboRIO, Robot Signal Light, Power Distribution Panel, Pneumatic Control Module, Voltage Regulation Module, FRC Radio	
Control System	Identify the publisher and official publication location of the technical specifications including: roboRIO, Power Distribution Panel, Pneumatic Control Module, Voltage Regulation Module	
Power	Identify the battery and battery size, weight and voltage	
Power	Identify FRC legal main breaker and demonstrate how to operate.	
Power	Identify how to determine if a battery is fully charged with a measurement device	
Power	Explain how batteries charge and discharge.	

Badge Completed Date: _____

Date Submitted: _____