

# Electrical Basics

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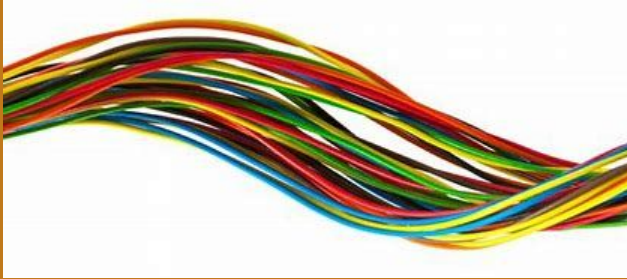


# What is Electrical?

- Electricity is the flow of electrons.
- Electrical is one of the most important aspects when it comes to building a robot.
  - There are many aspects when it comes to electrical including: wires, motors, modules, etc.



# Wires



## Electrical Wires

- Pieces of metal that transport electricity.
  - The things you need in order to make connections.
- There are two types of wires:
  - Regular Black and Red wires for connections
  - Green and Yellow wires for communications

# Motors



## Motors

- Powered by electricity that supplies motive power for devices with moving parts.

# Modules



The Voltage Regulator Module and Pneumatics Control Module

- The Voltage Regulator Module provides a steady source voltage supply throughout all components.
- The Pneumatics Control Module provides full control of the pneumatic components.

# Circuit Breaker



The circuit breaker provides the way of turning electrical/pneumatics components on and off.

# PDP



Power Distribution Panel/PDP

- The Power Distribution Panel is where the main source of electricity and power is controlled.

# RoboRio, Router, Light misc





# Electrical Tools



## Wire stripper/Cable Strippers

- Used for stripping wires/cables. This tool strips the insulators from the wire in order to be able to make connections with the actual wire.



## Soldering Iron

- Handheld tool that supplies heat to melt solder so that you can join two connections together.



## Crimper/Wire Crimper

- A tool used to crimp connectors onto wires.
  - Ethernet Cables