Motor On!

Attach the arms and connect the motors as you continue to construct RubiQ.

Grab the parts and the RubiQ Build Plans. Follow steps 6-8 to attach the arms to the PDB. Press the hex driver firmly into the screws to avoid stripping the metal head. A stripped screw makes it extremely difficult to remove parts.

RubiQ’s motors contain built-in electronic speed controls (ESCs), which control both the speed and direction of each motor. To attach the arms and motors, see steps 6-8.

Careful! Adding the motors in the correct configuration is crucial. Each ESC is configured differently, so attaching the motors incorrectly can make the drone fly erratically or even flip over during takeoff. The color of the motor cables indicates the direction the motors turn. Reds turn counterclockwise and Black turns clockwise. When you’re done, the matching colors should be opposite each other.
Drones

LABCards

More power also means more heat, so high Kv motors tend to burn out faster. The ultimate motor balances longer flight times with enough power to get the drone off the ground!

**C1**
**Laws, Regulations & Coordinating Groups**

Future drone entrepreneurs, pay close attention! Open Lesson 5 and explore the Airports and Commercial Use Restrictions units.

**C2**
**Laws, Regulations & Coordinating Groups**

Not everyone loves the idea of camera-carrying robots buzzing above their heads and homes. Open Lesson 5 and watch Trespassing and Liability.

**DP**

It's a bird, it's a plane, it's a … drone?

Download the FAA's B4UFly app and check to see if you're within 5 miles of any airport. If you are, research how to get in touch with air traffic control to notify them of upcoming flights.

**KEY TERMS**

- **Circuit:** a path of electron flow.
- **Electron:** a negatively-charged subatomic particle which can be bound to an atom or free to travel on its own through a circuit.
- **Energy:** the ability to do work or change matter.
- **ESC (electronic speed control):** electronic components that control the speed and direction of each motor.
- **Kinetic Energy:** the energy of moving objects.