

These magnetic fields attract and repel magnets, causing the shaft to spin. If the direction of the electricity is reversed, the motor will spin in the opposite direction.



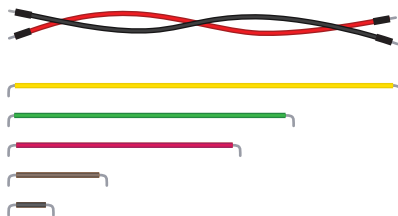
Diode - Ensures electricity only flows in one direction. Useful when you have a motor or other high current/voltage load in your circuit. Diodes are polarized, meaning that the direction that they're placed in a circuit matters. Placed one way, they allow current to pass through. Placed the other way, they block it. The anode side generally connects to the point of higher energy in your circuit. The cathode typically connects to the point of lower energy, or to ground. The cathode is usually marked with a band on one side of the component's body.



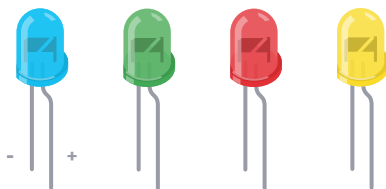
Gels (red, green, blue) - These filter out different wavelengths of light. When used in conjunction with photoresistors, they cause the sensor to only react to the amount of light in the filtered color.



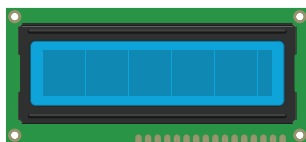
H-bridge - A circuit that allows you to control the polarity of the voltage applied to a load, usually a motor. The H-bridge in the kit is an integrated circuit, but it could also be constructed with a number of discrete components.



Jumper wires - Use these to connect components to each other on the breadboard, and to the Arduino.



Light Emitting Diodes (LEDs) - A type of diode that illuminates when electricity passes through it. Like all diodes, electricity only flows in one direction through these components. You're probably familiar with these as indicators on a variety of electronic devices. The anode, which typically connects to power, is usually the longer leg, and the cathode is the shorter leg.



Liquid Crystal Display (LCD) - A type of alphanumeric or graphic display based on liquid crystals. LCDs are available in a many sizes, shapes, and styles. Yours has 2 rows with 16 characters each.