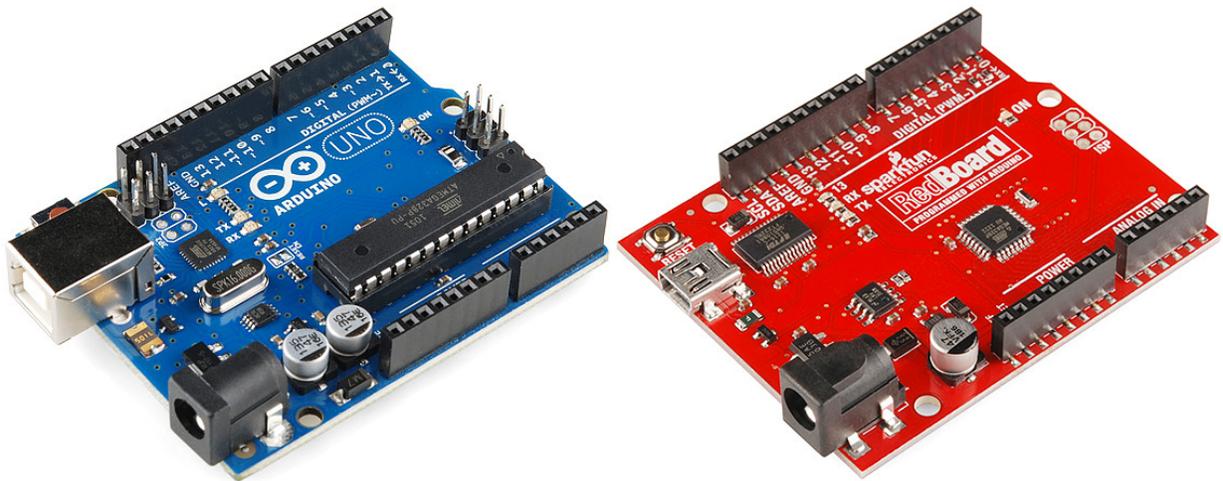# Arduino/Sparkfun Starter Kit

Training: Optional

Reservation: N/A

Please check with Library staff to confirm minimum age certification requirements to use this machine with supervision and without supervision as provided on the Equipment Usage Chart.

Certification

There is no certification process for this equipment. There is a training class to learn the basics of Arduino and circuits but you do not need to take the class to use the equipment.

To sign up for a training session please see the training binder (available at the front desk).

Reservation

There is no reservation for this equipment. It is only available on a first come/first serve basis.

Reference Sheet

Boards:

       Arduino Uno R3

       Sparkfun RedBoard V22

Software:

       Arduino IDE (Integrated Development Environment)

Arduino/Sparkfun Starter Kits

Materials and Software:

Arduino Starter Kit   Sparkfun Starter Kit

Overview

Makers will learn how to:
Understand basic circuits concepts
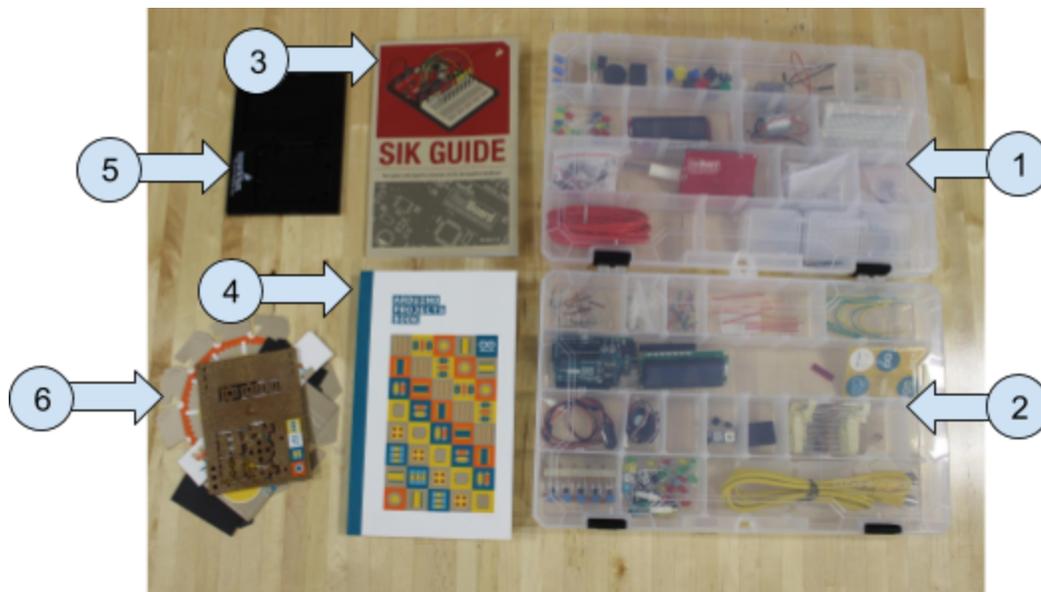Create a blinking LED circuit

Safety

- Arduino and RedBoard can be sensitive to high voltages. If circuits aren't wired correctly they may be damaged.
- Mis-wired power sources may heat up and can burn if touched.

Set Up

N/A

Kit Layout

1. Sparkfun Kit
2. Arduino Kit
3. Sparkfun Guide Book
4. Arduino Guide Book
5. Sparkfun Build Plate
6. Arduino Accessories

SOP Procedure

1. Discuss the Overview from the previous page.

2. Discuss the Kit Layout as seen on the previous page while relating it to the physical kit.

3. Discuss the Safety portion as seen on the previous page.

4. Discuss possible sources for Makers to get their own components (see Additional Resources for complete list).

Vocabulary

Arduino - A brand of microcontrollers and instructional material

Arduino Uno R3 - A specific microcontroller board that we include in our kits

Sparkfun - A hobby electronics distribution company

Sparkfun RedBoard V22 - A specific microcontroller board that we include in our kits, it is essentially a clone of the Arduino Uno R3

Microcontroller - A computer used for dedicated tasks, most are reprogrammable and are useful for prototyping and hobby projects

Programming - Computer language that tells the microcontroller what to do

IDE - The programming environment where we will write code for our microcontroller

Basic Circuit

1. Begin on page 20 of the Arduino Projects book. The book will guide you through creating your first circuit.

Cleanup

1. Ensure components are all packed away and returned the tote.

2. Equipment in this kit may not be kept for personal projects. Those seeking to keep projects should source their own components. See Additional Resources for list of potential suppliers.

Additional Resources

The following links may come in handy as you seek to expand your Arduino/Sparkfun skills

Adafruit - Tutorials, supplier, forum, project ideas
www.adafruit.com

Sparkfun - Tutorials, supplier, project ideas
www.sparkfun.com

Arduino - Tutorials, supplier, forum, project ideas
www.arduino.cc

Troubleshooting

Problem: Microcontroller board does not accept commands or execute commands
Solution: The board may have been fried. Check for the "ON" LED to be solid green
when connected to a power source.