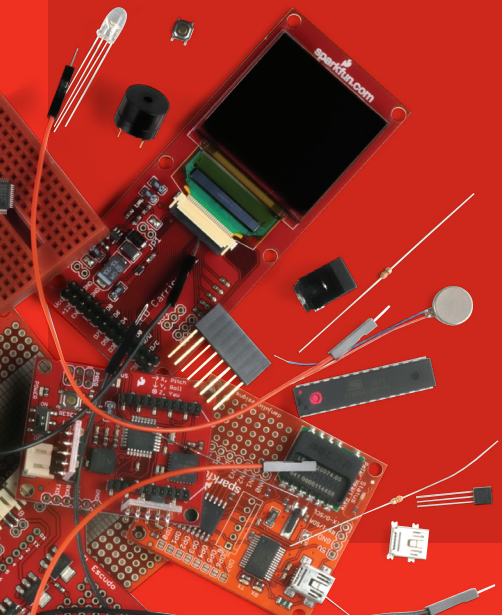
sparkfun™
ELECTRONICS

LET YOUR GEEK SHINE.

# Learn.
# Explore.
# Invent.



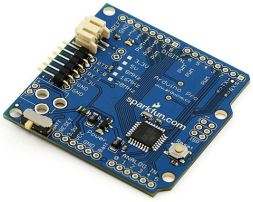
# LET'S TALK TECHNOLOGY

## A BIT ABOUT PHYSICAL COMPUTING

Physical computing is a vast (and ever-expanding) world. To put it simply, physical computing is a way of connecting the digital world to the real world. It can be as simple as pressing a button linked to a microcontroller and watching a light turn on or as complex as a self-navigating car – but more often it is somewhere in between. Most of all, it's an emerging trend in electronics that gives everyday people a chance to let their geek shine!

## A BIT MORE ABOUT MICROCONTROLLERS

A microcontroller is actually just a miniature, simplified computer. It is capable of taking an input (say, a reading from a light sensor or the push of a button) and responding with a corresponding output (such as a flashing light or a motor turning on). Microcontrollers are the "guts" of what makes physical computing possible!




## WHICH BRINGS US TO ARDUINO

Arduino is an Italian technology created a few years back, but don't worry – you don't have to be a native of Italy to understand it. Arduino is essentially a physical computing platform – a combination of open-source programming software and microcontrollers. Arduino can be used in advanced projects, but is built with the novice in mind. It features a simplified programming language, free software, and an expansive support network. We have a bunch of Arduino boards available on our website, including the Arduino Starter Kit, so you can find the one that meets your needs. Bellissimo!

## WHO IS SPARKFUN AND WHAT IS IT TO ME?

SparkFun is a company built around one core idea - sharing ingenuity. We think everyone should have the tools, hardware, and resources to play with cool electronic gadgetry. We want to enable you to transform your idea into reality.

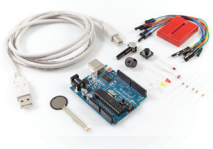
SparkFun carries thousands of products and dozens of tutorials designed to help your project come to life. Our goal is to get technology in your hands in an easier, more intuitive, and affordable way. Should you have a problem, SparkFun has top-notch customer service, technical support, and an active help forum.

Satisfy your curiosity and give electronics a shot! When you do, you'll realize there are millions of electronic projects - interactive art, augmented reality video games, and e-textile clothing (just to name a few) - created by people just like you. So if you have a great idea for a new electronic device, or you're just looking to get inspired, check out our website for the products and resources you need!

## WHAT DOES SPARKFUN SELL AND WHO USES IT?

SparkFun sells the bits and pieces you need to make your electronics project possible. Whether it's a robot that can cook your breakfast or a GPS cat tracker, our products and resources are designed to make the world of electronics more accessible to the average person.

Think you don't have the skills to play around with electronic gadgets? Sure you do! We have customers of all backgrounds and ages, from seasoned professionals to kids in the 3rd grade. Our customers are crafters and designers, interactive artists and DJs, elementary teachers and college professors, and, yes, even a few engineers. But all of our customers share two common traits – a desire to learn and a love of electronics. Come check out some of our products and see for yourself – we bet there's something for you!



**THE ARDUINO STARTER KIT** is a perfect kit for someone interested in making their own electronics project and who wants to explore the power of Arduino, a user-friendly physical computing platform. This kit features a microcontroller and enough components to get you started. Use this kit to give you hands-on experience in programming and physical computing and get a root understanding of the world of Arduino.

**THE LILYPAD** is an e-textile technology that allows you to wear your electronics on your sleeve – literally. Using this kit, you can incorporate electronic bits into your clothing to make them react to your environment. For example, you could use LEDs to light up your shirt in a brilliant pattern when you start dancing. Try this kit out for any e-textile project you can dream up!

**LEARN TO SOLDER.** SparkFun carries a number of kits designed to get you familiar with a key technique – soldering. Start with one of our PTH Kits (such as the Simon, ClockIt, or MetroGnome Kit) and work your way up to a more advanced SMD Kit. Learn how to solder with our kits and you'll be on your way to designing your own boards!

## WHERE CAN I FIND OUT MORE?

We at SparkFun love to share information about electronics. Go to our website at **www.sparkfun.com** to get more information and learn how you can get started in the wonderful world of electronics! You can also email us at **customersupport@sparkfun.com**. You can also find us on Flickr, Twitter, and Facebook. We're here to help!

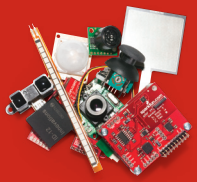
# A NEW WORLD OF ELECTRONICS

**PRODUCTS, PROJECTS, AND TUTORIALS** TO LET YOUR GEEK SHINE.

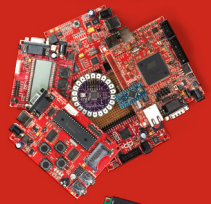
**TUTORIALS AND PROJECTS.** SparkFun offers many tutorials to help you explore the world of technology. Start with our "Beginning Embedded Electronics" tutorial to get the basics down and then move on to more advanced areas. Eventually, use our tutorials to help prototype, design, and build your own idea! We also have a projects section on our website to show you some examples of the types of things you can build and how to do so!

**PRODUCTS.** The products we carry range from microcontrollers and sensors to LEDs and LCDs. Whatever electronics project you are dreaming up, we have the part you need! We are constantly updating our catalog with the latest technology and include all the documentation and information we can get our hands on to make creating your project as easy as possible.

# YOUR PROJECT STARTS HERE...



**SENSORS.** Whether you need to get a weight measurement, read the ambient temperature of a room, or sense the presence of an object using an infrared detector, SparkFun has all the bits you need to create your invention. We also offer dozens of accelerometers, gyroscopes, and proximity sensors and are updating our product list constantly to keep you on the cutting edge.



**MICROCONTROLLERS.** Once you have the sensors you want, you'll need a way to monitor them and control their outputs. That's why SparkFun carries many types of microcontrollers, including AVRs (used on the popular Arduino), PICs, and ARMs. Using these microcontrollers will allow you to have complete control over your project.

**COMMUNICATION.** With your sensors now linked to your microcontroller, you can design components to interact and respond to one another. Using SparkFun products, you can build an entire embedded electronics system. Our communication solutions include simple serial data links, Bluetooth wireless communication, RFID encryption, and LCD touchscreen displays, just to name a few.

# EXPLORE THE NEW WORLD OF TECH

LET SOME OF OUR CUSTOMER CREATIONS **INSPIRE YOUR OWN INNER INVENTOR.**

Leah Buechley is the inventor of the **LILYPAD,** an Arduino-based platform where you can fuse electronics with fashion. Use the LilyPad to create your own sewable electronic system in your clothing!

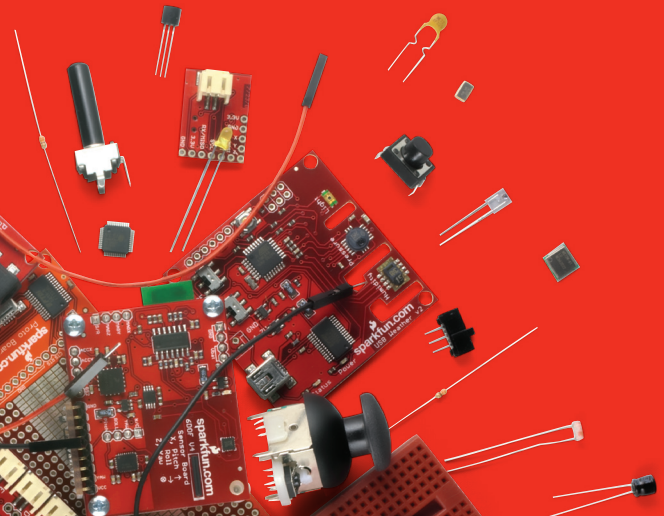
Michael Cooper used a SparkFun **WITILT** to record the forces his body endures when he completes a BASE jump. Like extreme sports? Build something to monitor your speed as you zip down the ski slopes or track your progress as you hike the Rockies – physical computing makes it possible!

Pete Lewis, SparkFun employee and electronics enthusiast, used SparkFun **TUTORIALS** as a guide while inventing the RockBox, a monitor system designed to save musicians' ears as they shred their guitars. Rock on!

**Please keep, share, or recycle.**

© SparkFun Electronics, Inc. All Rights Reserved. The SparkFun Arduino Starter Kit (09284) and LilyPad features, specifications, system requirements, and availability are subject to change without notice. Arduino, LilyPad, and all other trademarks contained herein are the property of their respective owners. Arduino and LilyPad is released under the Creative Commons Attribution Share-Alike 3.0 License. Please visit the Creative Commons website for more information.

sparkfun™
ELECTRONICS

WEBSITE: sparkfun.com
6175 LONGBOW DRIVE, SUITE 200
BOULDER, COLORADO USA
ZIP CODE: 80301

SHARING
INGENUITY