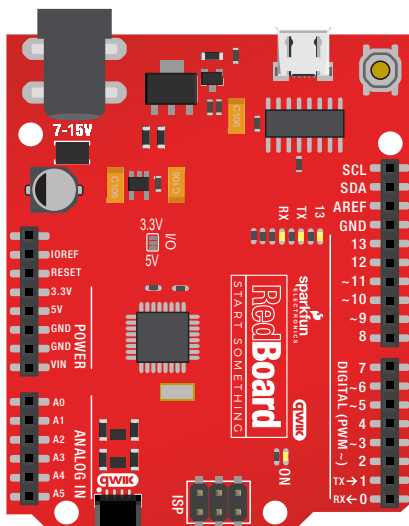


The RedBoard Platform

THE DIY REVOLUTION: At SparkFun we believe that an understanding of electronics is a core literacy that opens up a world of opportunities in the fields of robotics, Internet of Things (IoT), engineering, fashion, medical industries, environmental sciences, performing arts and more. This guide is designed to explore the connection between software and hardware, introducing Arduino code and SparkFun parts as they are used in the context of building engaging projects. The circuits in this guide progress in difficulty as new concepts and components are introduced. Completing each circuit means much more than just “experimenting”; you will walk away with a fun project you can use — and a sense of accomplishment that is just the beginning of your electronics journey. At the end of each circuit, you’ll find coding challenges that extend your learning and fuel ongoing innovation.

A COMPUTER FOR THE PHYSICAL WORLD

The SparkFun RedBoard Qwiic is your development platform. At its roots, the RedBoard is essentially a small, portable computer, also known as a microcontroller. It is capable of taking inputs (such as the push of a button or a reading from a light sensor) and interpreting that information to control various outputs (like blinking an LED light or spinning an electric motor). That’s where the term “physical computing” comes in; this board is capable of taking the world of electronics and relating it to the physical world in a real and tangible way.



THE SPARKFUN REDBOARD QWIIC is one of a multitude of development boards based on the ATmega328 microprocessor. It has 14 digital input/output pins (six of which can be PWM outputs), six analog inputs, a 16MHz crystal oscillator, a USB connection, a power jack, and a reset button. You’ll learn more about each of the RedBoard’s features as you progress through this guide.

NOTE: For the remainder of this guide, in the interest of brevity, we will refer to the RedBoard Qwiic simply as the “RedBoard.”