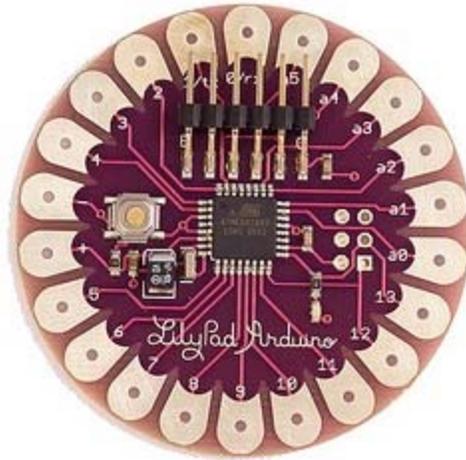




## LilyPad Arduino



### Overview

The LilyPad Arduino is a microcontroller board designed for wearables and e-textiles. It can be sewn to fabric and similarly mounted power supplies, sensors and actuators with conductive thread. The board is based on the ATmega168V (the low-power version of the ATmega168) ([datasheet](#)) or the ATmega328V ([datasheet](#)). The LilyPad Arduino was designed and developed by Leah Buechley and SparkFun Electronics.

### Downloads

Schematic: [LilyPad\\_schematic\\_v18.pdf](#)

EAGLE (CAD) Files: [LilyPad\\_Board\\_v18.zip](#)

### Summary

*Warning: Don't power the LilyPad Arduino with more than 5.5 volts, or plug the power in backwards: you'll kill it.*

Microcontroller	ATmega168V or ATmega328V
Operating Voltage	2.7-5.5 V
Input Voltage	2.7-5.5 V
Digital I/O Pins	14 (of which 6 provide PWM output)
Analog Input Pins	6
DC Current per I/O Pin	40 mA
Flash Memory	16 KB (of which 2 KB used by bootloader)
SRAM	1 KB

EEPROM	512 bytes
Clock Speed	8 MHz

## Programming

The LilyPad Arduino can be programmed with the Arduino software ([download](#)). \*Note\*, the LilyPad Arduino should only be programmed with software versions 0010 or higher. You can program it with earlier versions, but all of the time related functions will be off (twice as slow as they should be).

The ATmega168V or ATmega328V on the Arduino LilyPad comes preburned with a [bootloader](#) that allows you to upload new code to it with the Arduino software. You can also bypass the bootloader and program the ATmega through the ICSP (In-Circuit Serial Programming) header; see [these instructions](#) for details.

## Power

The LilyPad Arduino can be powered via the USB connection or with an external power supply.

If an external power supply is used, it should provide between 2.7 and 5.5 volts. This can come either from an AC-to-DC adapter (wall-wart) or battery. Again, *don't power the LilyPad Arduino with more than 5.5 volts, or plug the power in backwards: you'll kill it.*

## Physical Characteristics

The LilyPad Arduino is a circle, approximately 50mm (2") in diameter. The board itself is .8mm (1/32") thick (approximately 3mm (1/8") where electronics are attached).

## Washability

Wash at your own risk - we do ;). We recommend washing projects by hand with a mild detergent. Drip dry. Make sure you remove your power supply first!

## More Information

To get your LilyPad Arduino working, see [this guide](#). SparkFun Electronics has a [range of accessories](#) for use with the LilyPad Arduino.