

# INTRODUCTION

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- Arduino is an open-source electronics platform based on easy-to-use hardware and software. [Arduino boards](#) are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board.
- Arduino/Genuino boards sense the environment by receiving inputs from many sensors, and affects their surroundings by controlling lights, motors, and other actuators. Arduino/Genuino boards are the microcontroller development platform that will be at the heart of your projects.



- 1. **Digital pins** Use these pins with `digitalRead()`, `digitalWrite()`, and `analogWrite()`. `analogWrite()` works only on the pins with the PWM symbol.
- 2. **Pin 13 LED** The only actuator built-in to your board. Besides being a handy target for your first blink sketch, this LED is very useful for debugging.
- 3. **Power LED** Indicates that your Genuino is receiving power. Useful for debugging.
- 4. **ATmega microcontroller** The heart of your board.
- 5. **Analog in** Use these pins with `analogRead()`.
- 6. **GND and 5V pins** Use these pins to provide +5V power and ground to your circuits.
- 7. **Power connector** This is how you power your Genuino when it's not plugged into a USB port for power. Can accept voltages between 7-12V.
- 8. **TX and RX LEDs** These LEDs indicate communication between your Genuino and your computer. Expect them to flicker rapidly during sketch upload as well as during serial communication. Useful for debugging.
- 9. **USB port** Used for powering your Genuino Uno, uploading your sketches to your Genuino, and for communicating with your Genuino sketch (via `Serial.println()` etc.).
- 10. **Reset button** Resets the ATmega microcontroller.