Creative Engineering: An Introduction to Arduinos 💡

The Basics

1. An Arduino is a type of _____ that acts like the "brain" for electronic projects.
2. The four essential parts of an Arduino build are _____, _____, _____, and the wires that connect them.
3. Inputs are also called _____ and are like our senses (eyes and ears) because they gather information from the world.
4. Outputs are also called _____ and are like our muscles because they perform actions based on the Arduino's instructions.
5. An example of an input mentioned in the video is a _____, and an example of an output is a _____.

Electricity and Circuits

6. Electricity is simply _____ moving.

7. An electrical circuit is compared to a _____ for electrons to travel on.
8. A _____ acts like a gate in the circuit, stopping the flow of electrons.
9. A circuit is complete when electrons can flow from the _____ terminal to the _____ terminal of the battery.

Programming and Building

10. The software used to program an Arduino is called the _____.
11. An Arduino program is called a _____.
12. The two main sections of a program are the _____, which runs once, and the _____, which runs continuously.
13. You don't need to know how to code from scratch because there are many _____ of code available online that you can copy and paste.
14. A _____ is a temporary platform used to easily prototype and test a circuit without soldering.
15. For mass production, you would create a custom _____ that packages all the components together.

Answer Key

1. microcontroller
2. inputs, brain (microcontroller), outputs
3. sensors
4. effectors
5. light sensor (or button, microphone, proximity sensor, knob, joystick, soil moisture sensor), servo motor (or DC motor, LED, buzzer)
6. electrons
7. Hot Wheels track
8. switch
9. positive, negative
10. Arduino IDE
11. sketch
12. setup, loop
13. examples
14. solderless breadboard
15. Printed Circuit Board (PCB)