**ELEGOO EL-KIT-001**

# ELEGOO UNO R3 Project Most Complete Starter Kit Instruction Manual

Model: EL-KIT-001

## 1. Introduction

The ELEGOO UNO R3 Project Most Complete Starter Kit is designed for beginners and enthusiasts to learn electronics, programming, and robotics. This comprehensive kit includes over 200 components and a detailed tutorial to guide you through more than 30 lessons. It is 100% compatible with the Arduino IDE, providing a robust platform for various projects.

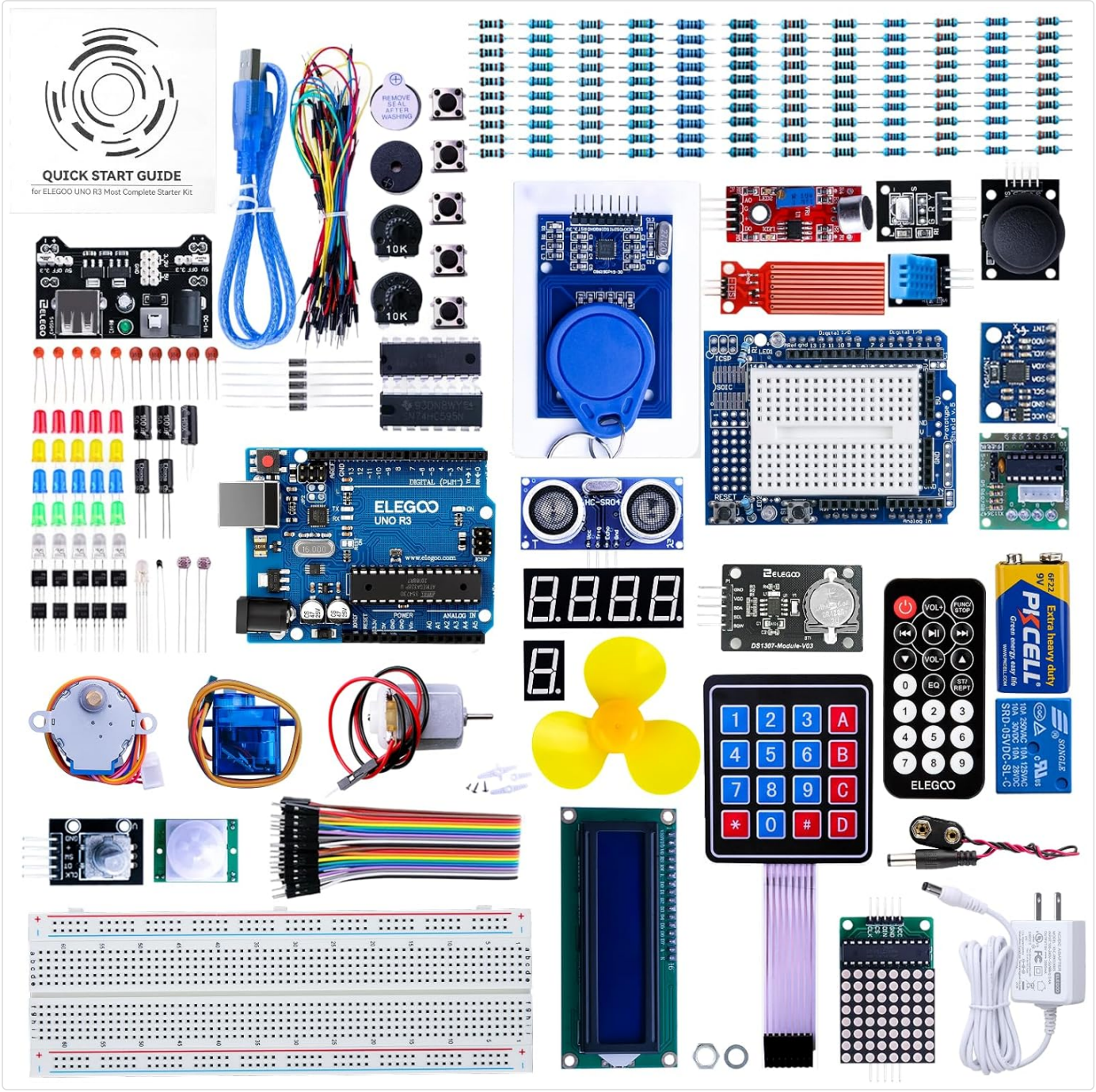



Image: The ELEGOO UNO R3 Project Most Complete Starter Kit, showcasing the organized components within its case.

## 2. What's in the Box

Your ELEGOO UNO R3 Project Most Complete Starter Kit comes with a wide array of components, neatly organized in a compartmentalized case, along with a bonus box for smaller parts. Below is a detailed list of included items:

- 1pcs UNO R3 Controller Board
- 1pcs Breadboard
- 1pcs Servo Motor (SG90)
- 1pcs Stepper Motor
- 1pcs ULN2003 Stepper Motor Driver Board
- 1pcs Prototype Expansion

- 1pcs Power Supply Module (WARNING: Do not use voltage higher than 9V)
- 1pcs HC-SR501 PIR Motion Sensor
- 1pcs Ultrasonic Sensor
- 1pcs GY-521 Module
- 1pcs 3V Servo Motor
- 1pcs MAX7219 Module
- 1pcs Remote
- 1pcs 9V 1A Power Supply
- 65pcs Jumper Wire
- 1pcs Water Level Sensor
- 1pcs USB Cable
- 1pcs 9V Battery with DC
- 1pcs RC522 RFID Module
- 120pcs Resistors (various values: 10R, 100R, 220R, 330R, 1K, 2K, 5K1, 10K, 100K, 1M)
- 20pcs Female-to-male DuPont Wire
- 25pcs LEDs (5 each of white, yellow, blue, red, green)
- 1pcs RGB LED
- 10pcs Ceramic Capacitors (22pf & 104pf)
- 2pcs Photoresistors
- 1pcs Thermistor
- 5pcs Diode Rectifier (1N4007)
- 2pcs Electrolytic Capacitors (10UF 50V)
- 2pcs Electrolytic Capacitors (100UF 50V)
- 10pcs NPN Transistors (PN2222 & S8050)
- 1pcs Tilt Switch
- 5pcs Buttons (small)
- 1pcs 1-digit 7-segment Display
- 1pcs 4-digit 7-segment Display
- 1pcs Sound Sensor Module
- 1pcs LCD1602 Module (with pin header)
- 1pcs IC L293D
- 1pcs IC 74HC595
- 1pcs Active Buzzer
- 1pcs Passive Buzzer
- 1pcs RTC Module
- 1pcs DHT11 Temperature and Humidity Module
- 2pcs Potentiometers
- 1pcs Rotary Encoder Module
- 1pcs Joystick Module
- 1pcs Keypad Module
- 1pcs 5V Relay
- 1pcs IR Receiver Module




Image: A comprehensive view of all components included in the starter kit, neatly arranged.




Image: The kit's components are well-organized in a clear plastic case with multiple compartments.

Video: An official overview of the ELEGOO UNO R3 Project Most Complete Starter Kit, highlighting its contents and potential.

## 3. Setup

To begin your journey with the ELEGOO UNO R3 Starter Kit, follow these general setup steps:

1. **Software Installation:** Install the Arduino IDE on your computer. The kit includes a CD with necessary software, tutorials, and datasheets. For the latest versions, it is recommended to download them from the official ELEGOO website.
2. **Connect the UNO R3 Board:** Use the provided USB cable to connect your ELEGOO UNO R3 Controller Board to your computer. This will power the board and allow for program uploads.
3. **Familiarize with the Board:** Review the UNO R3 board layout to understand its various pins and functionalities.
4. **Basic Circuit Assembly:** For your first projects, use the breadboard to assemble circuits by connecting

components with jumper wires according to the tutorial instructions.

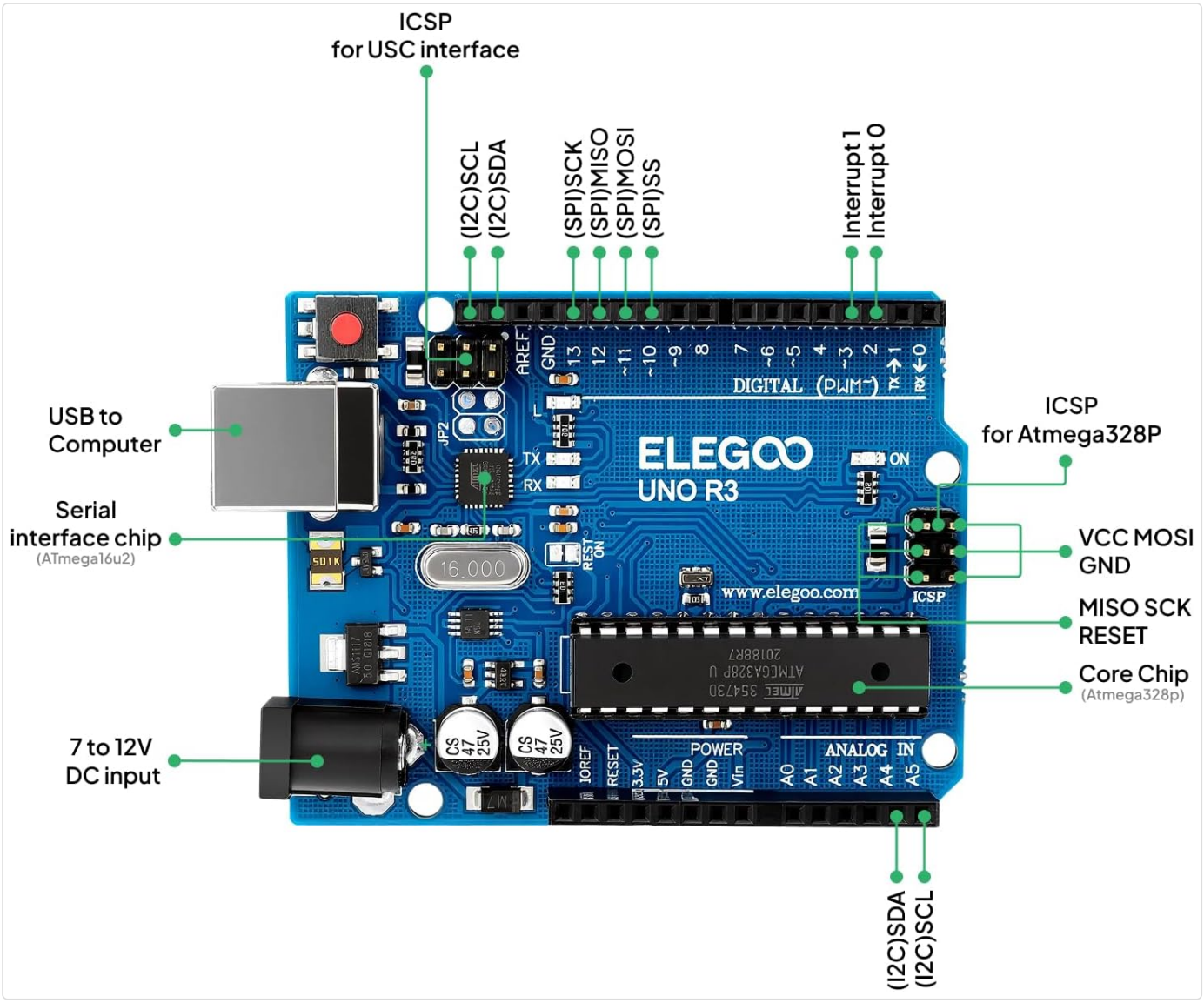



Image: Detailed diagram of the ELEGOO UNO R3 Controller Board, showing USB input, DC input, ICSP interfaces, and core chip.

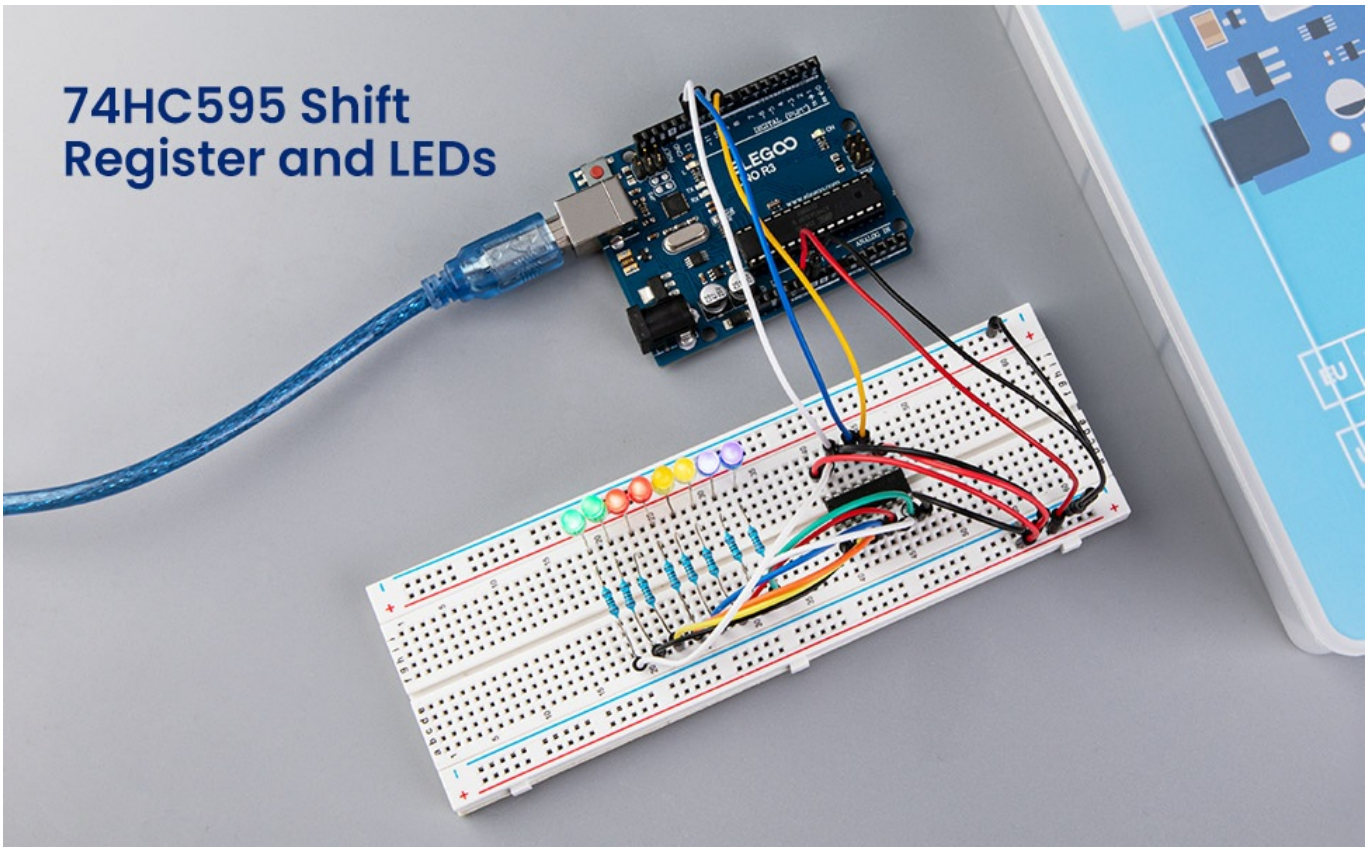



Image: An ELEGOO UNO R3 board connected to a breadboard, demonstrating a basic circuit setup with an LED.

## 4. Operating Principles

The ELEGOO UNO R3 board serves as the central processing unit for your electronic projects. By uploading programs (sketches) to the board via the Arduino IDE, you can control various components and interact with the physical world. The included tutorial provides step-by-step instructions for numerous projects, demonstrating how to:

- Control LEDs and displays.
- Read input from sensors (e.g., ultrasonic, temperature, motion).
- Operate motors (servo, stepper, DC).
- Interface with other modules like RFID and keypads.

Each lesson in the tutorial explains the basic settings, software usage, working principles of components, and provides sample code to help you understand and implement the projects.

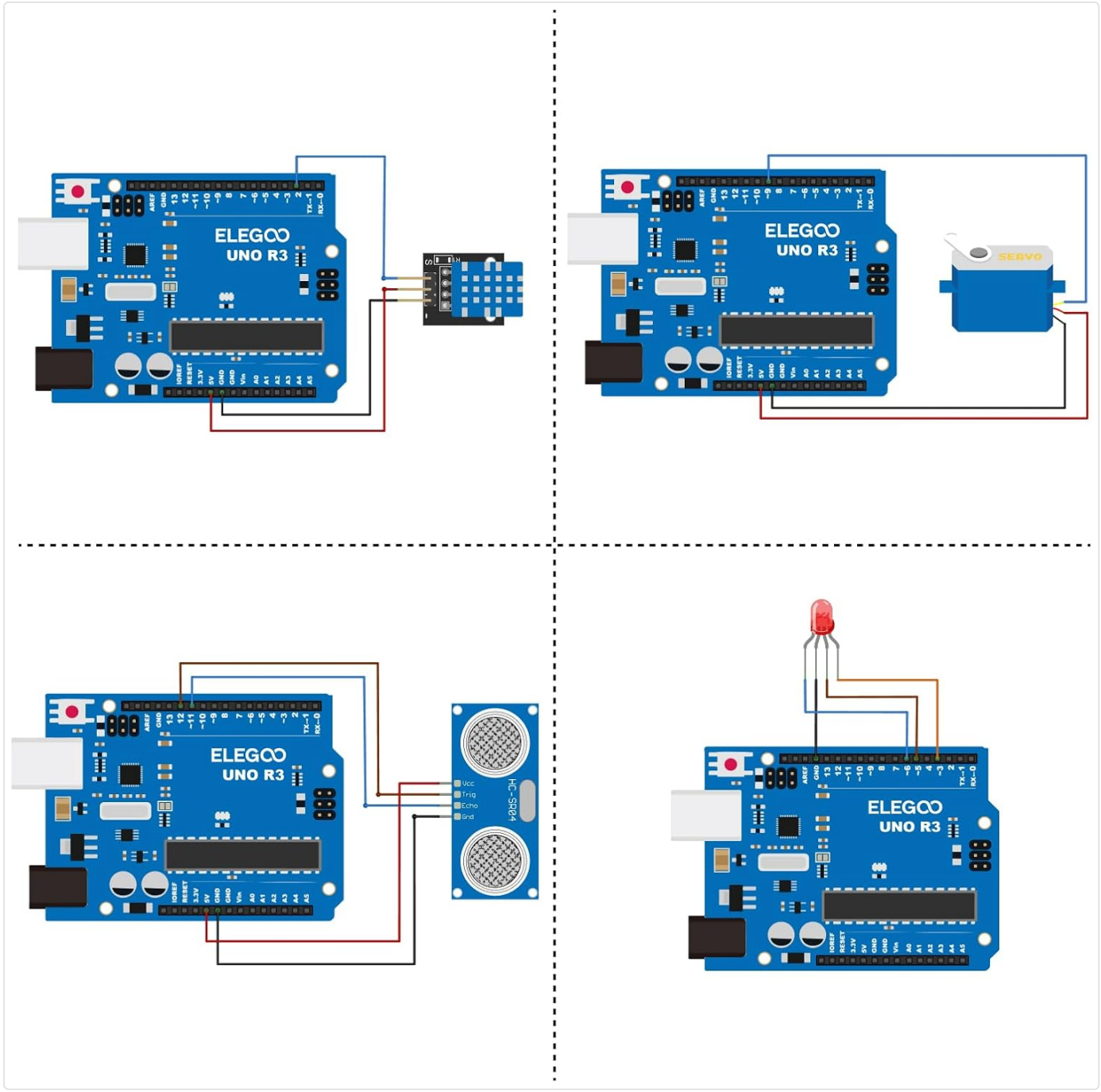



Image: Example circuit diagrams illustrating how to connect different components to the ELEGOO UNO R3 board.

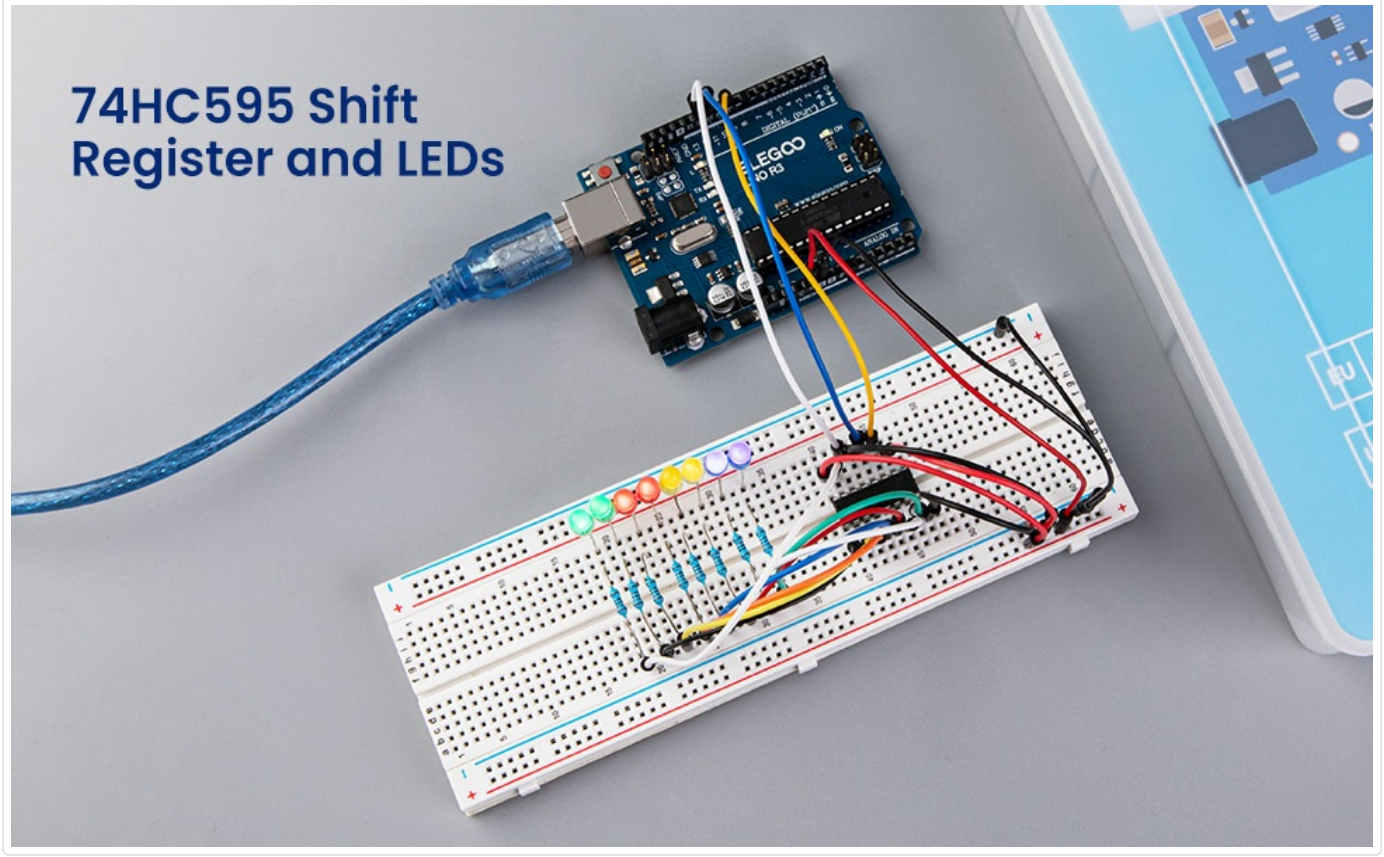



Image: A breadboard setup demonstrating the use of a 74HC595 Shift Register with multiple LEDs, controlled by an Arduino board.

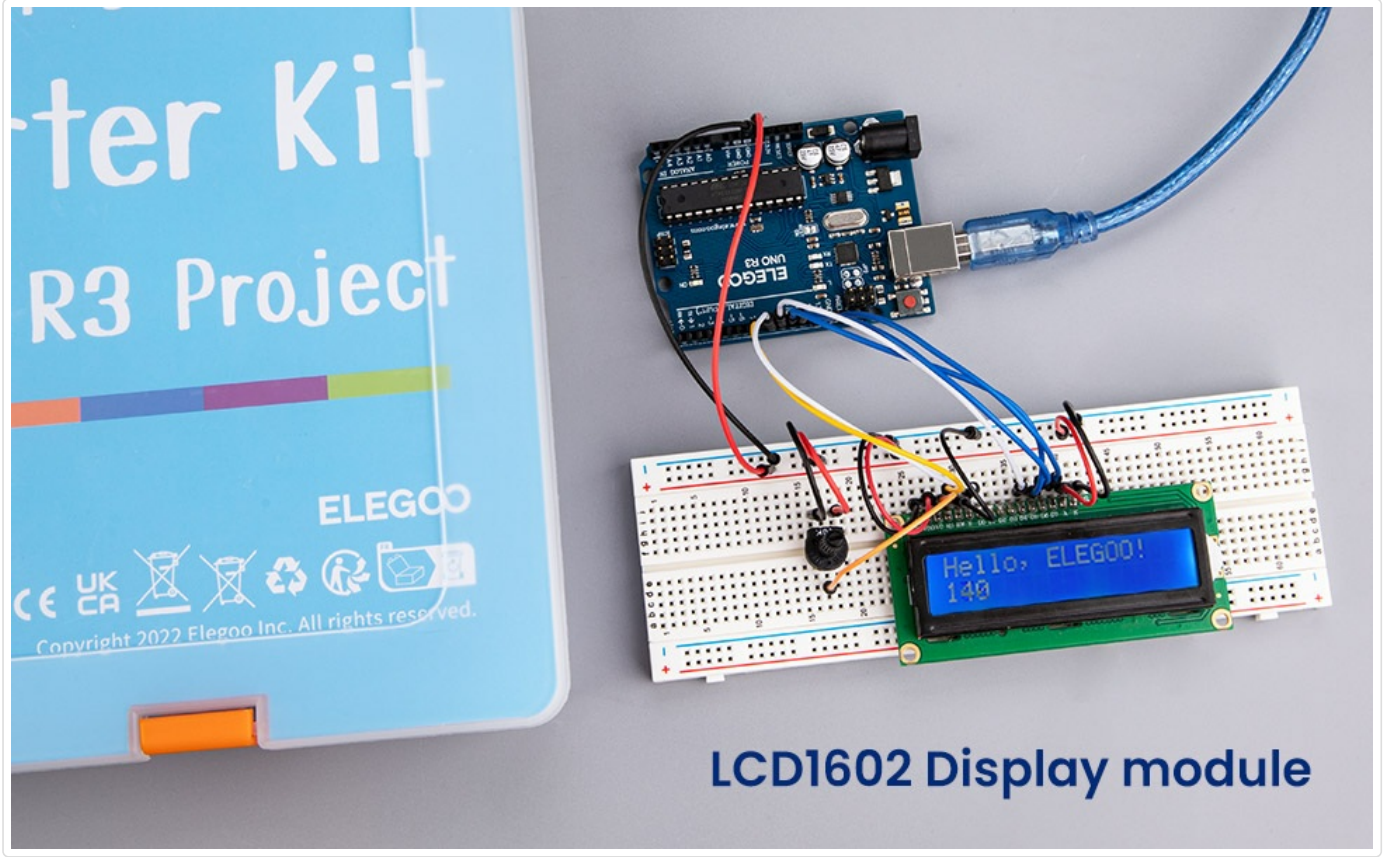



Image: An ELEGOO UNO R3 board connected to an LCD1602 Display module, showing text output.

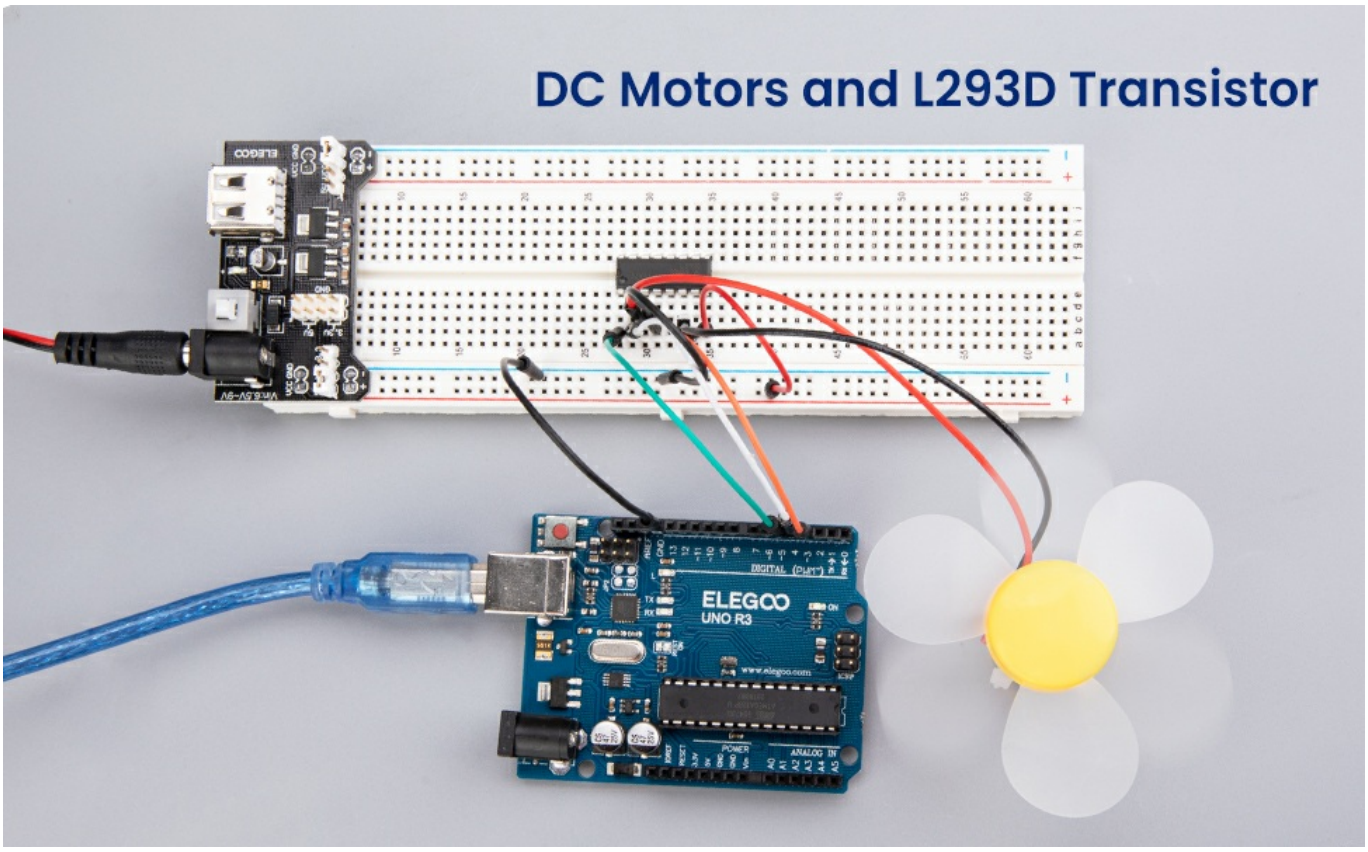



Image: A circuit featuring DC motors controlled by an L293D Transistor, connected to an ELEGOO UNO R3 board.

## 5. Component Details and Quality

ELEGOO prioritizes quality and ease of use. Many modules come pre-soldered for convenience. The kit includes various components, from basic resistors and LEDs to advanced sensors and modules, all designed for educational purposes.

# Component List

***for Elegoo UNO R3 The Most Complete Starter Kit***

25pcs LED (white, yellow, blue, red, green)
1pcs RGB LED
10pcs Ceramic Capacitor (22pf & 104pf)
2pcs Photoresistor
1pcs Thermistor
5pcs Diode Rectifier (1N4007)
4pcs Electrolytic Capacitor (10UF 50V & 100UF 50V)
10pcs NPN Transistor (PN2222 & S8050)
1pcs Tilt Switch
5pcs Button (small)
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1pcs MAX7219 Module
1pcs Remote
1pcs 9V 1A Power Supply
1pcs 65 Jumper Wire
1pcs Water Lever Sensor
1pcs USB Cable
1pcs 9V Battery with DC
1pcs RC522 RFID Module
120pcs Resistor
(10R/100R/220R/330R/1K/2K/5K1/10K/100K/1M)
20pcs Female-to-male DuPont Wire

***Safety Directive Age Warning:***
Not suitable for children under 10 years.
For use under adult supervision.

Image: A comprehensive list detailing every component included in the ELEGOO UNO R3 Starter Kit.

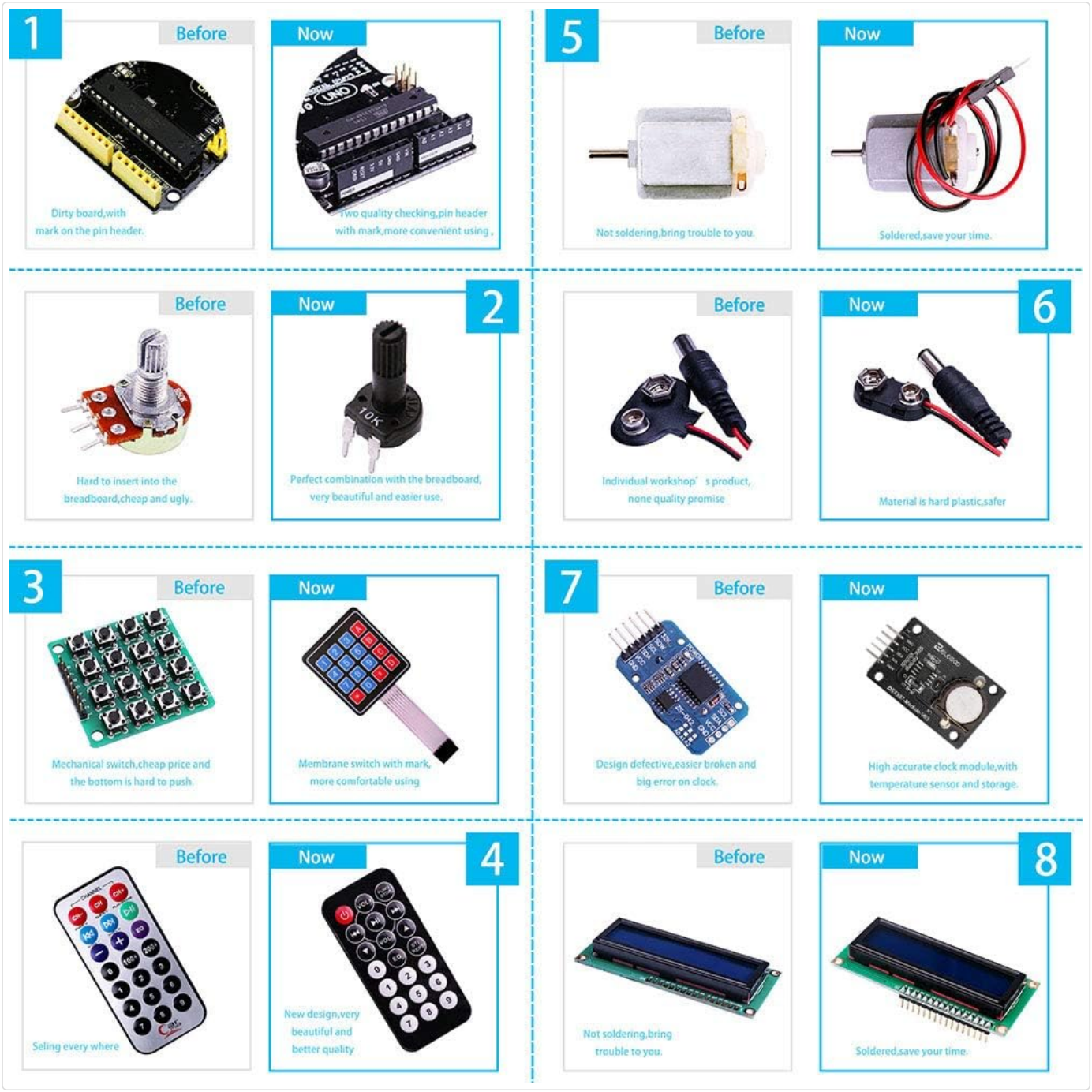



Image: Visual comparison highlighting quality improvements in components, such as pre-soldered modules and better organized parts.




Image: Details of the protective packaging for components, including foam to prevent pin bending, antistatic bags for ESD protection, and plastic bags for organization.

## 6. Maintenance

Proper maintenance ensures the longevity and functionality of your ELEGOO UNO R3 Starter Kit components:

- **Storage:** Always store components in the provided compartmentalized case to prevent loss and damage.
- **Handling:** Handle electronic components with care to avoid bending pins or damaging sensitive parts. Avoid touching exposed circuit boards unnecessarily.
- **Environment:** Keep the kit in a dry, dust-free environment. Avoid exposure to extreme temperatures or direct sunlight.

- **Static Electricity:** Be mindful of static electricity, which can damage electronic components. Work on a static-free surface if possible.

## 7. Troubleshooting

If you encounter issues while working with your kit, consider the following troubleshooting steps:

- **Check Connections:** Ensure all wires are correctly connected to the appropriate pins on the UNO R3 board and breadboard. Loose connections are a common cause of problems.
- **Verify Code:** Double-check your Arduino code for any syntax errors or logical mistakes. Refer to the tutorial's sample code for comparison.
- **Power Supply:** Confirm that the UNO R3 board is receiving adequate power. Remember the warning:**Do not use voltage higher than 9V** with the power supply module.
- **Component Orientation:** Ensure components like LEDs and diodes are inserted with the correct polarity.
- **Consult Tutorial:** The included PDF tutorial provides detailed troubleshooting tips for each lesson.
- **Online Resources:** The Arduino community and ELEGOO's online resources offer extensive support and forums for common issues.

## 8. Specifications

| Feature | Detail |
|---|---|
| Product Dimensions | 13.7 x 8.4 x 1.85 inches |
| Item Weight | 2.15 pounds |
| Manufacturer | ELEGOO |
| ASIN | B01CZTLHGE |
| Item Model Number | EL-KIT-001 |
| Batteries | 3 CR2 batteries required (included) |
| Connectivity Technology | USB |

## 9. Safety Information

- **Age Warning:** Not suitable for children under 10 years. For use under adult supervision.
- **Power Supply:** When using the power supply module, do not use voltage higher than 9V to avoid damaging components.

- **General Safety:** Keep away from flame. Do not swallow small components.

## 10. Warranty and Support

ELEGOO products typically come with a manufacturer's warranty. For specific warranty details, please refer to the documentation included with your kit or visit the official ELEGOO website.
For any questions regarding your products or technical support, please contact ELEGOO customer service:

- **Email:** service@elegoo.com (US&CA Customer)
- **Email:** euservice@elegoo.com (European and Asian customers)

ELEGOO is committed to providing excellent support and continuously upgrading its products. Their kits are designed to make STEM education accessible and easy to learn.


### Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

**Name**

Anonymous

**Email**

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

**Question**

Example: How do I reset this device or fix this error?

**Details**

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question