

## Apitor APR042

# Apitor 20-in-1 STEM Building Robot Kit User Manual

Model: APR042

## 1. INTRODUCTION

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Welcome to the world of STEM learning with the Apitor 20-in-1 STEM Building Robot Kit. This comprehensive kit is designed to introduce children aged 6 and up to the exciting fields of science, technology, engineering, and mathematics through hands-on building and programming. With 233 building blocks, this kit allows for the construction of 20 different models, including robots, animals, vehicles, and buildings, fostering creativity and problem-solving skills.

The Apitor robot kit integrates multiple control modes, advanced sensors, and a user-friendly graphical programming interface, making it an ideal educational tool for beginners to advanced young learners.



Figure 1.1: The Apitor 20-in-1 STEM Building Robot Kit, showcasing an assembled robot and its app control interface.

## 2. SETUP AND ASSEMBLY

Before you begin, ensure all components are present. The kit includes 233 building blocks, a main control unit, two motors, two LED lights, an infrared sensor, and a color sensor.

### 2.1. Battery Installation

The main control unit requires 3 AA batteries. Locate the battery compartment on the control unit, open it, and insert the batteries, ensuring correct polarity. Close the compartment securely.

### 2.2. Building Your Robot

Follow the detailed instructions provided in the physical manual to assemble your chosen robot model from the 20 available designs. The building blocks are compatible with most popular brands, allowing for expanded creative possibilities.

# Apitor Theme Series



Figure 2.1: Examples of 20 different models that can be constructed using the Apitor building blocks.

## 2.3. App Installation

Download the dedicated Apitor app from your device's app store. This app is essential for controlling and programming your robot. Ensure your device meets the minimum system requirements for the app.

## 3. OPERATING YOUR ROBOT

Once your robot is assembled and the app is installed, you can begin interacting with it.

### 3.1. Connecting to the App

Turn on your robot's main control unit. Open the Apitor app on your smart device and follow the on-screen prompts to connect via Bluetooth. A successful connection will be indicated by a specific light pattern on the control unit.

### 3.2. Control Modes

The robot supports three primary control modes:



- **Dual Motor Control:** Control both motors independently for complex movements.
- **Single Motor Control:** Control one motor at a time for precise actions.
- **Gyroscope Control:** Utilize your device's gyroscope to control the robot's movement by tilting your device.



Figure 3.1: Demonstrating gyroscope control via the Apitor app.

### 3.3. Sensor Functions

The robot is equipped with various sensors to enhance interaction:

- **Infrared Sensor:** Detects distance to objects, allowing the robot to avoid obstacles or react to proximity.
- **Color Sensor:** Recognizes red, blue, and three other states, enabling the robot to respond to different colored surfaces.
- **Voice Detection:** Allows the robot to respond to voice commands.
- **Music Playback & Text-to-Speech:** The robot can play music and convert text into spoken words, adding an auditory dimension to its interactions.

# Powerful Sensors

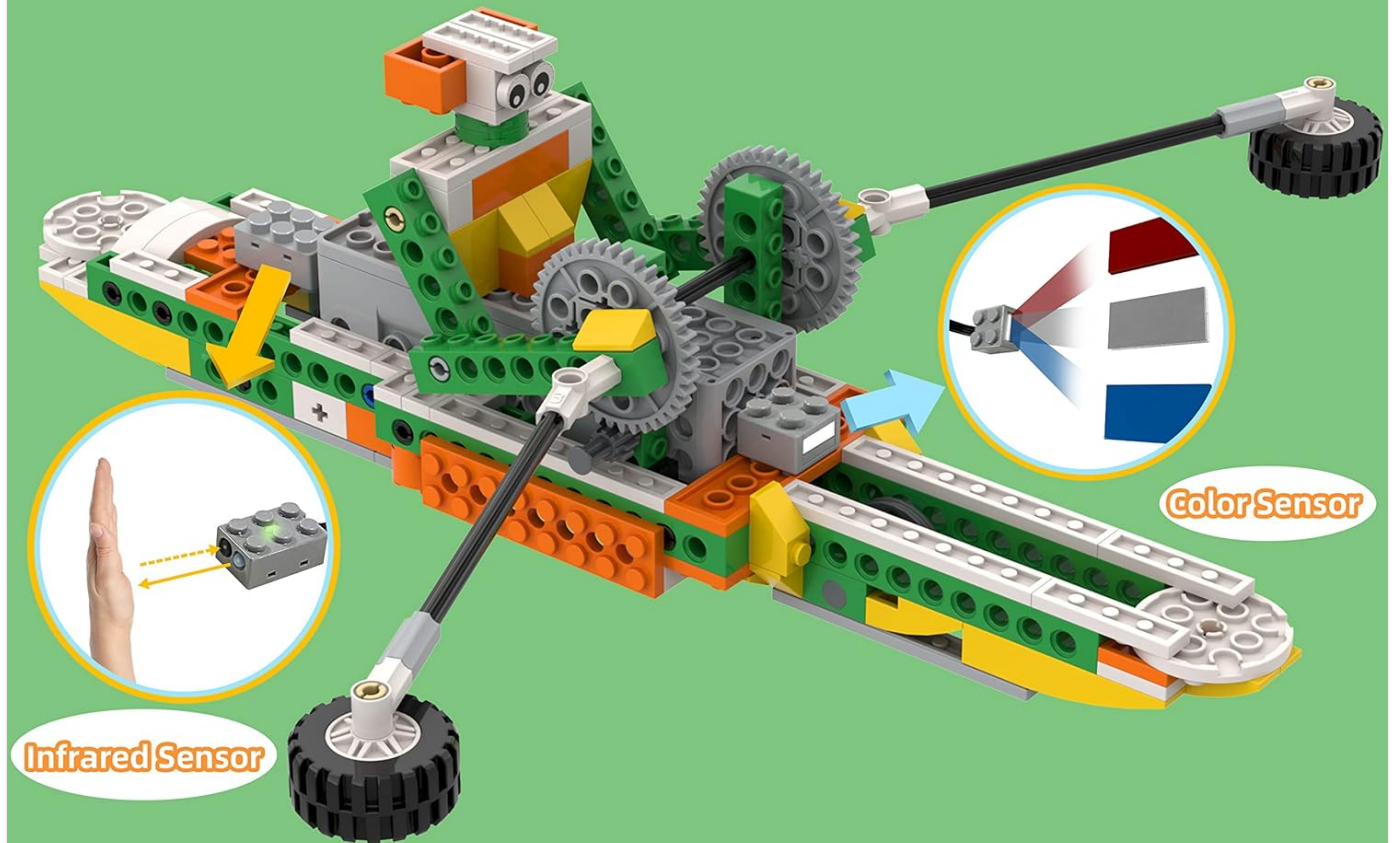


Figure 3.2: Illustration of the robot's powerful sensors.

## 3.4. Graphical Programming (Scratch 3.0)

The Apitor app features a graphical programming interface based on Scratch 3.0. This visual drag-and-drop system makes coding accessible and intuitive for beginners.

- Drag and connect code blocks to create sequences of actions.
- Experiment with different commands to see how your robot responds.
- Develop computational thinking and problem-solving abilities through hands-on coding.



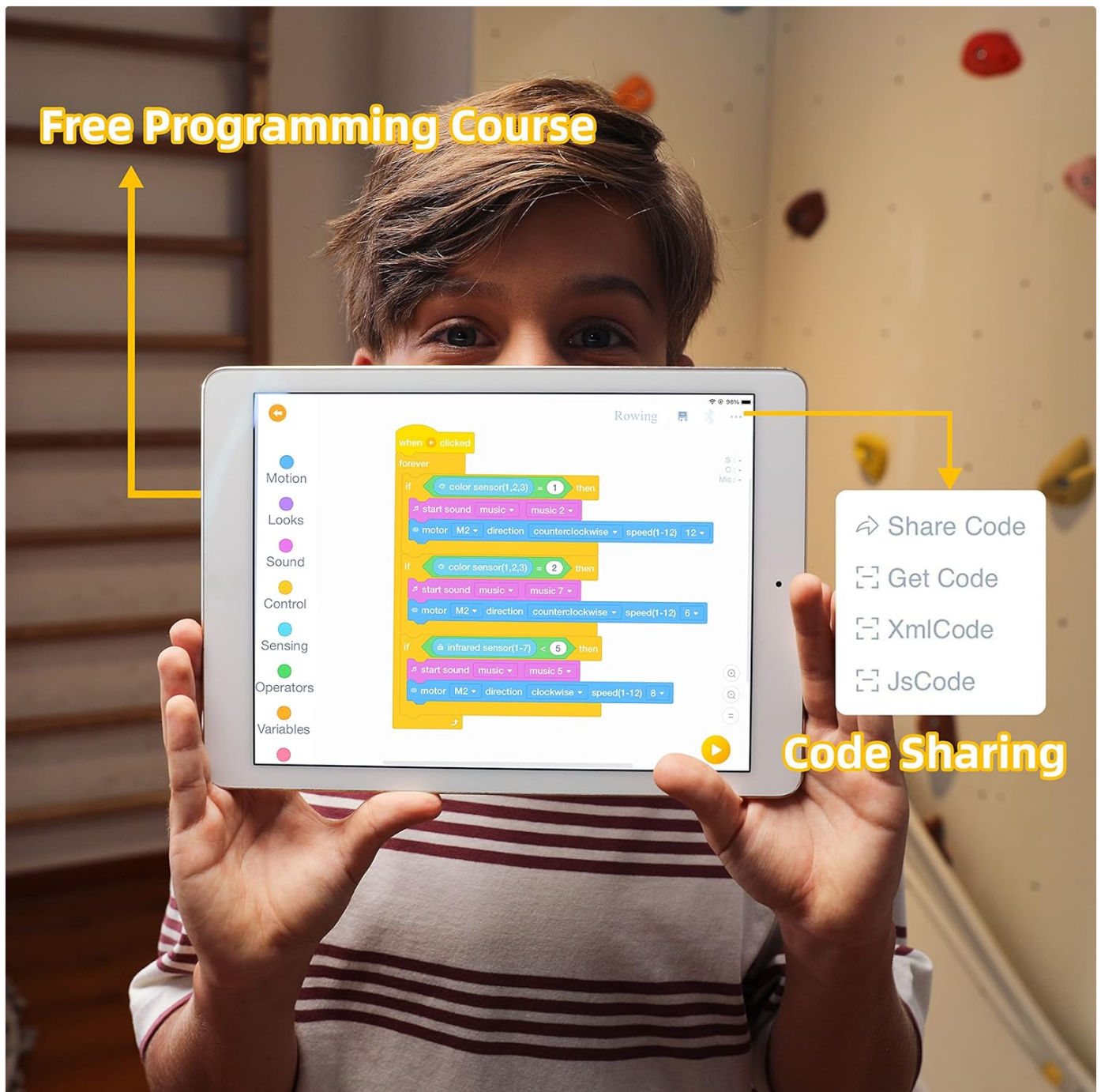


Figure 3.3: The graphical programming interface for easy coding.

### 3.5. Official Product Video

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Video 3.1: A demonstration of the Apitor robot's interactive capabilities, including its response to external stimuli and movement.

## 4. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your Apitor robot kit.

### 4.1. Cleaning

The building blocks and main control unit are made of safe and harmless ABS plastic. To clean, gently wipe components with a dry or slightly damp cloth. Avoid using harsh chemicals or abrasive materials, as these can damage the plastic.

### 4.2. Storage

When not in use, store the kit in a cool, dry place away from direct sunlight and extreme temperatures. Disassemble complex models for easier storage and to prevent stress on the connections. Remove batteries from the main control unit if storing for extended periods to prevent leakage.

## 5. TROUBLESHOOTING

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If you encounter issues with your Apitor robot kit, refer to the following common troubleshooting steps:

- **Robot Not Powering On:**
  - Check if the batteries are correctly installed and fully charged. Replace if necessary.
  - Ensure the power switch on the main control unit is in the "On" position.
- **Unable to Connect via Bluetooth:**
  - Ensure Bluetooth is enabled on your smart device.
  - Make sure the robot is powered on and within range (typically 10 meters or 30 feet).
  - Close and reopen the Apitor app.
  - Restart both your smart device and the robot's control unit.
- **Robot Not Responding to Commands:**
  - Verify that the robot is successfully connected to the app.
  - Check your programming code in the app for any errors or incorrect block sequences.
  - Ensure motors and sensors are securely connected to the main control unit.
- **Sensors Not Functioning Correctly:**
  - Ensure the sensor is clean and free from obstructions.
  - Check the sensor's connection to the main control unit.
  - Review the programming related to the specific sensor in the app.

If these steps do not resolve the issue, please refer to the support section for further assistance.

## 6. SPECIFICATIONS

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| Feature                      | Detail                              |
|------------------------------|-------------------------------------|
| Product Dimensions           | 12.2 x 8.4 x 2.5 inches             |
| Item Weight                  | 0.353 ounces                        |
| Item Model Number            | APR042                              |
| Manufacturer Recommended Age | 6 years and up                      |
| Batteries Required           | 3 AA batteries (not included)       |
| Building Blocks Count        | 233 pieces                          |
| Control Modes                | Dual Motor, Single Motor, Gyroscope |
| Sensors Included             | Infrared Sensor, Color Sensor       |

| Feature               | Detail                        |
|-----------------------|-------------------------------|
| Programming Interface | Graphical (Scratch 3.0 based) |

## 7. WARRANTY AND SUPPORT

Apitor stands behind the quality of its products. The main control unit of the robot building kit comes with a warranty for one year from the date of purchase.

Apitor is committed to providing educational STEM toys that foster curiosity and learning. Our products are designed to meet the strictest quality and safety standards, having passed all toy certificates in the United States and Europe (FCC, CPC, CPSIA, ASTM F963-17, CPSC 16, Prop 65, CE, EN71, EN62115, EN IEC 62115, UKCA, WEEE, RoHS, etc.).




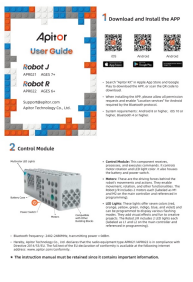
Figure 7.1: STEM.org Authenticated Educational Product recognition.

For further assistance, technical support, or warranty claims, please visit the official Apitor store or contact customer service through the details provided on the product packaging or the Apitor website.

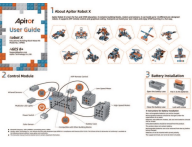
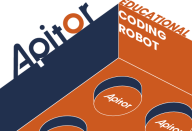

[Visit the Apitor Store on Amazon](#)



### Related Documents - APR042

|   |   |
|---|---|
|  | <p><a href="#">Apitor SuperBot Educational Building Block Robot Kit User Manual</a></p> <p>User manual for the Apitor SuperBot, an educational building block robot kit for STEM learning. Features 400+ pieces, 18+ robot builds, app control, and graphical programming for ages 8+.</p>  |
|  | <p><a href="#">Apitor Robot J/R User Guide: Setup, Connection, and Operation</a></p> <p>Comprehensive user guide for Apitor Robot J (APR021) and Robot R (APR022). Learn about control module components, battery installation, Bluetooth connection via the Apitor Kit app, and LED status indicators. Includes technical specifications and safety information.</p> |



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|   | <p><a href="#">Apitor R05A Robot X User Manual and FCC Compliance</a></p> <p>Apitor R05A Robot X user manual detailing FCC compliance, operating conditions, and troubleshooting for radio frequency interference. Includes manufacturer and importer information.</p>  |
|  | <p><a href="#">Apitor Coding Robots: STEM Educational Building Kits for Kids   Robot X &amp; Robot Q</a></p> <p>Explore Apitor's innovative coding robots, Robot X and Robot Q. Designed for children aged 6-12, these STEM educational building block kits foster creativity, problem-solving, and fun learning experiences with hundreds of pieces and multiple configurations.</p> |
|  | <p><a href="#">Apitor Robot Wheels APR011 FCC ID 2AS4DR01W Compliance Information</a></p> <p>Official FCC and ISED compliance statements for the Apitor Robot Wheels model APR011 (FCC ID: 2AS4DR01W, IC: 33012-R01W). Includes regulatory compliance, RF exposure limits, and manufacturer details from Apitor Technology Co., Ltd. and responsible party X-media USA Inc.</p>       |