Makeblock MCP-P04-1AP

Makeblock Smart World 3-in-1 Add-on Pack for mBot2: User Manual

Model: MCP-P04-1AP
Brand: Makeblock

1. Introduction

The Makeblock Smart World 3-in-1 Add-on Pack is designed to expand the capabilities of your mBot2 programmable robot car toy. This pack introduces the concept of a 'Smart World' into the learning experience, offering new possibilities for collaboration, exploration, and problem-solving skills. It allows users to transform their mBot2 into three distinct robot forms: a Robotic Arm, a Robotic Carrier, and a Surveying Robot.
Note: The mBot2 robot is not included with this add-on pack and must be purchased separately.

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Video: Introduction to the Makeblock mBot Neo Smart World Add-on Pack. This video provides an overview of the add-on pack and its potential applications.

2. What's in the Box

Verify that all components are present before beginning assembly.

- Robotic Arm add-on pack components
- Robotic Carrier add-on pack components
- Surveying Robot add-on pack components
- Balls (2 included)
- Assembly tools
- Building guide

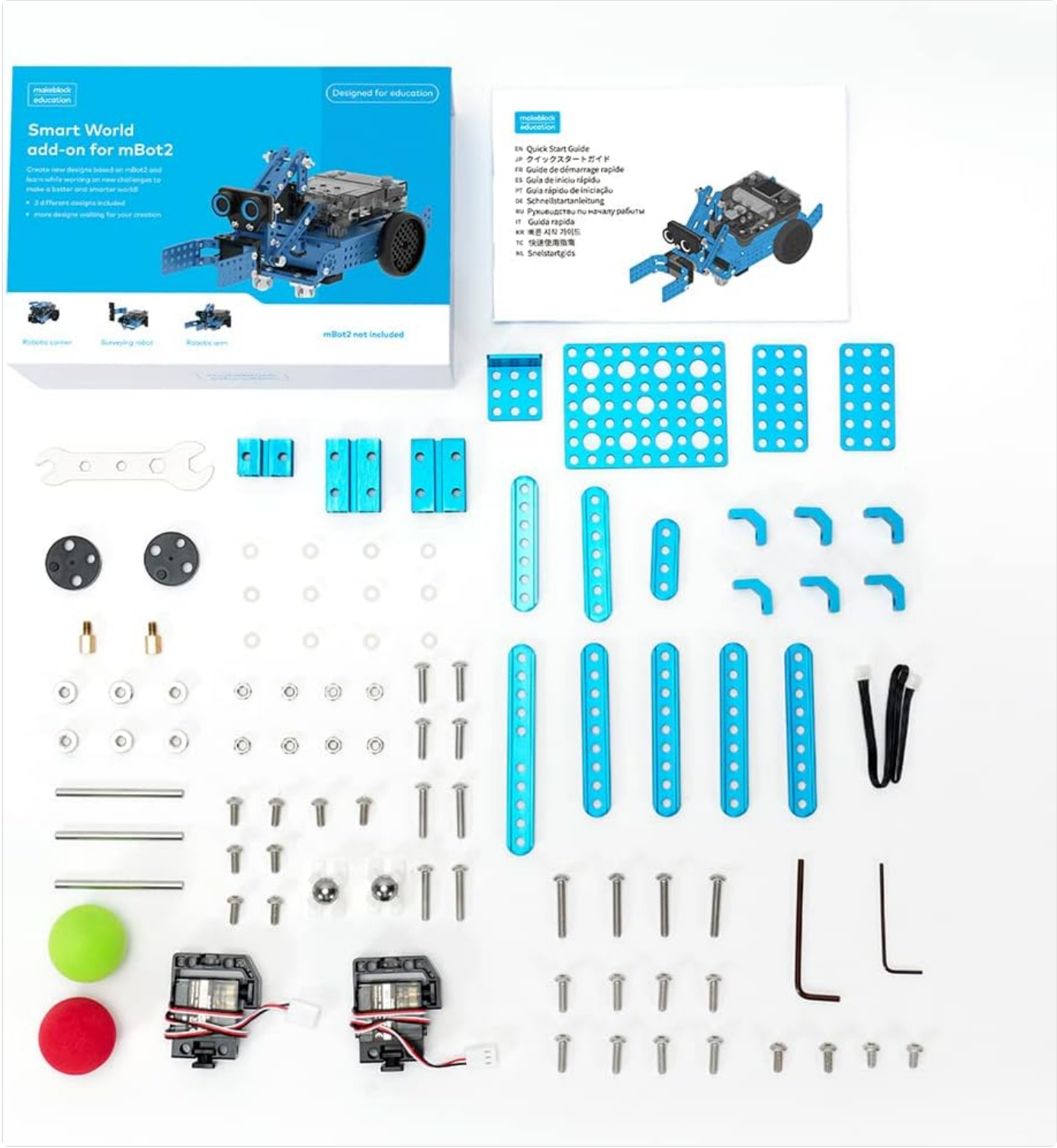

Image: All components included in the Makeblock Smart World Add-on Pack, laid out for inspection.

3. Assembly

The Smart World add-on pack allows you to build three different expansion designs: Robotic Arm, Robotic Carrier, and Surveying Robot. Follow the detailed instructions in the included building guide for each specific design.

3.1. Robotic Arm Assembly

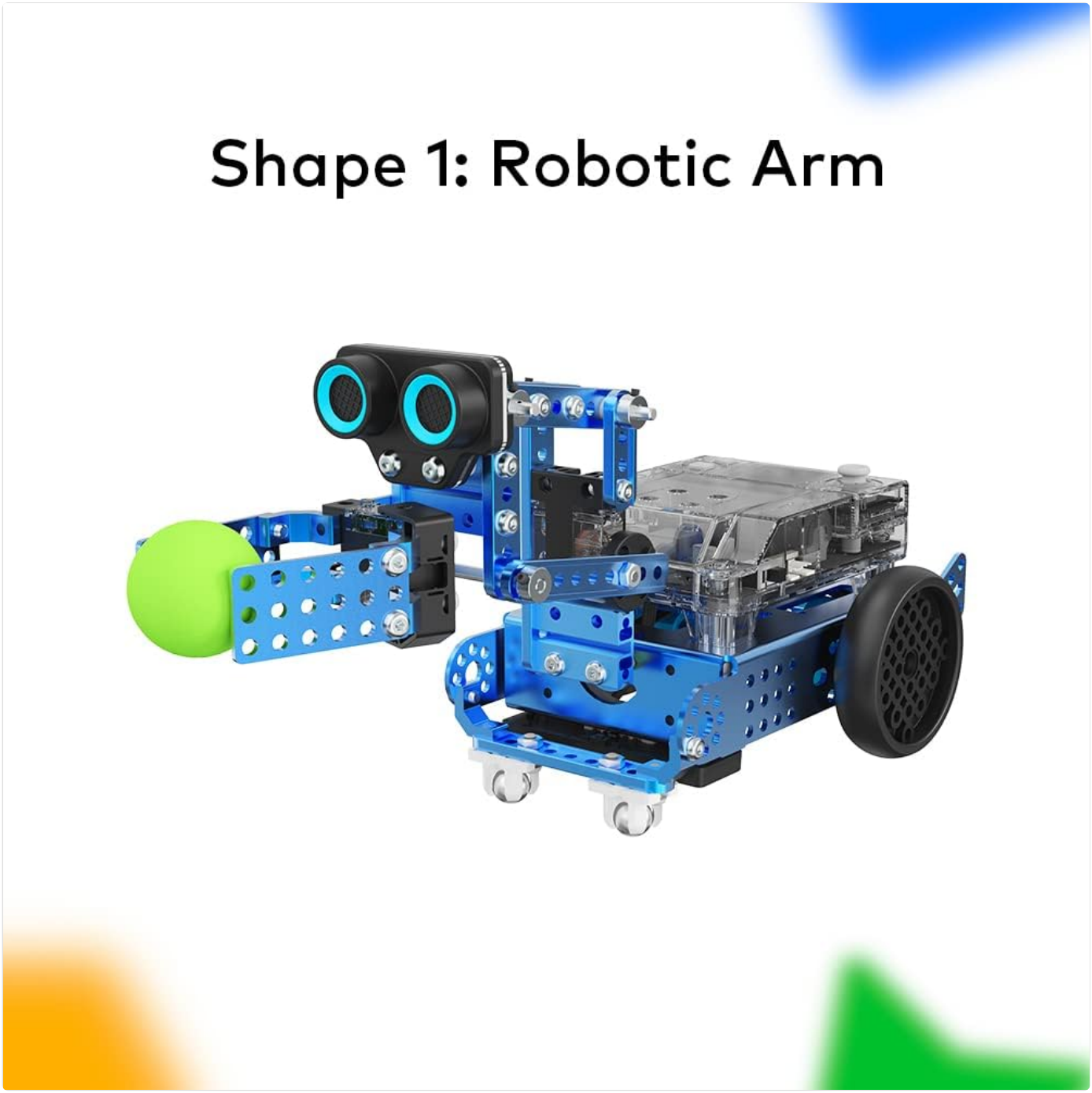

Image: The mBot2 configured as a Robotic Arm, ready to interact with objects.

3.2. Robotic Carrier Assembly

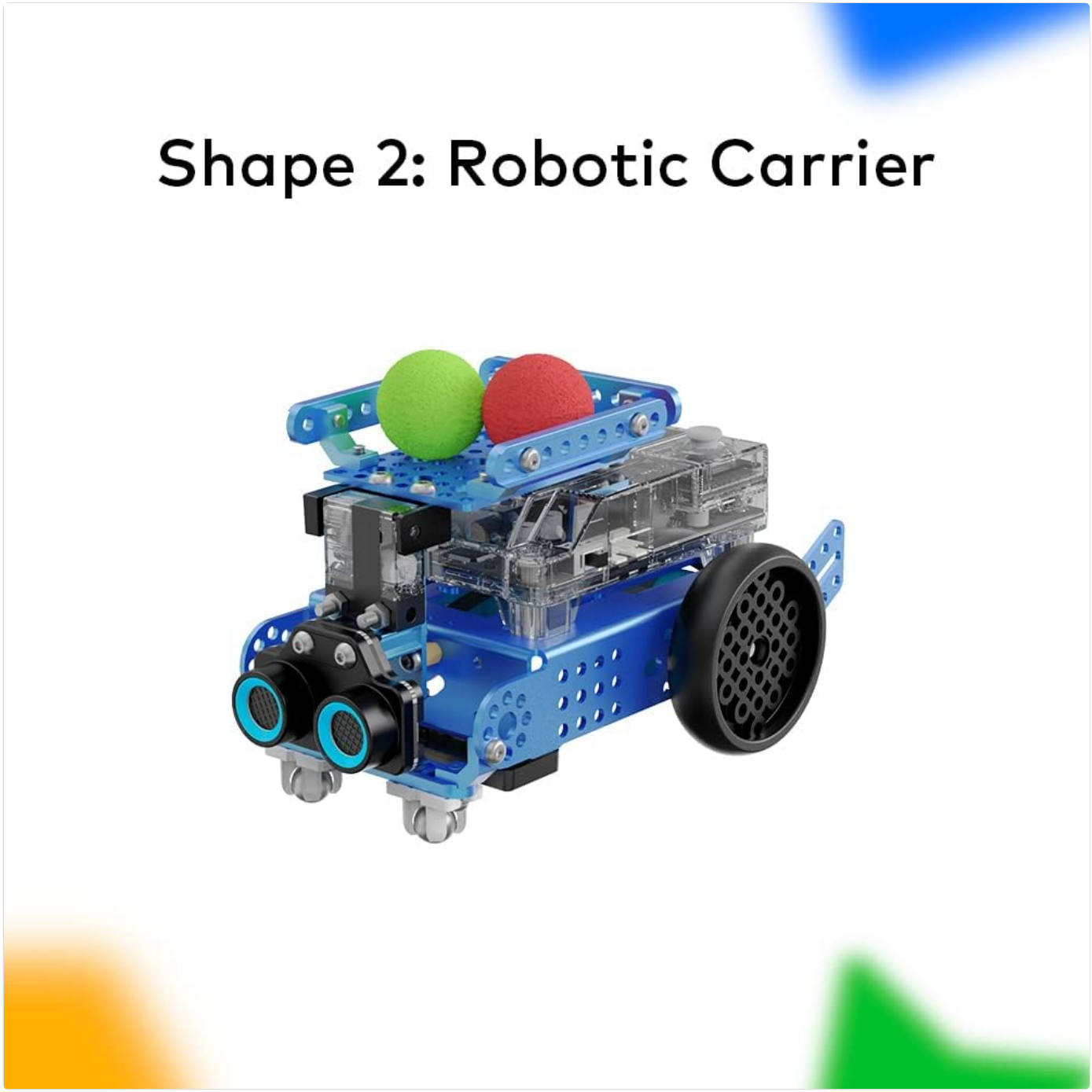

Image: The mBot2 configured as a Robotic Carrier, designed for transporting items.

3.3. Surveying Robot Assembly

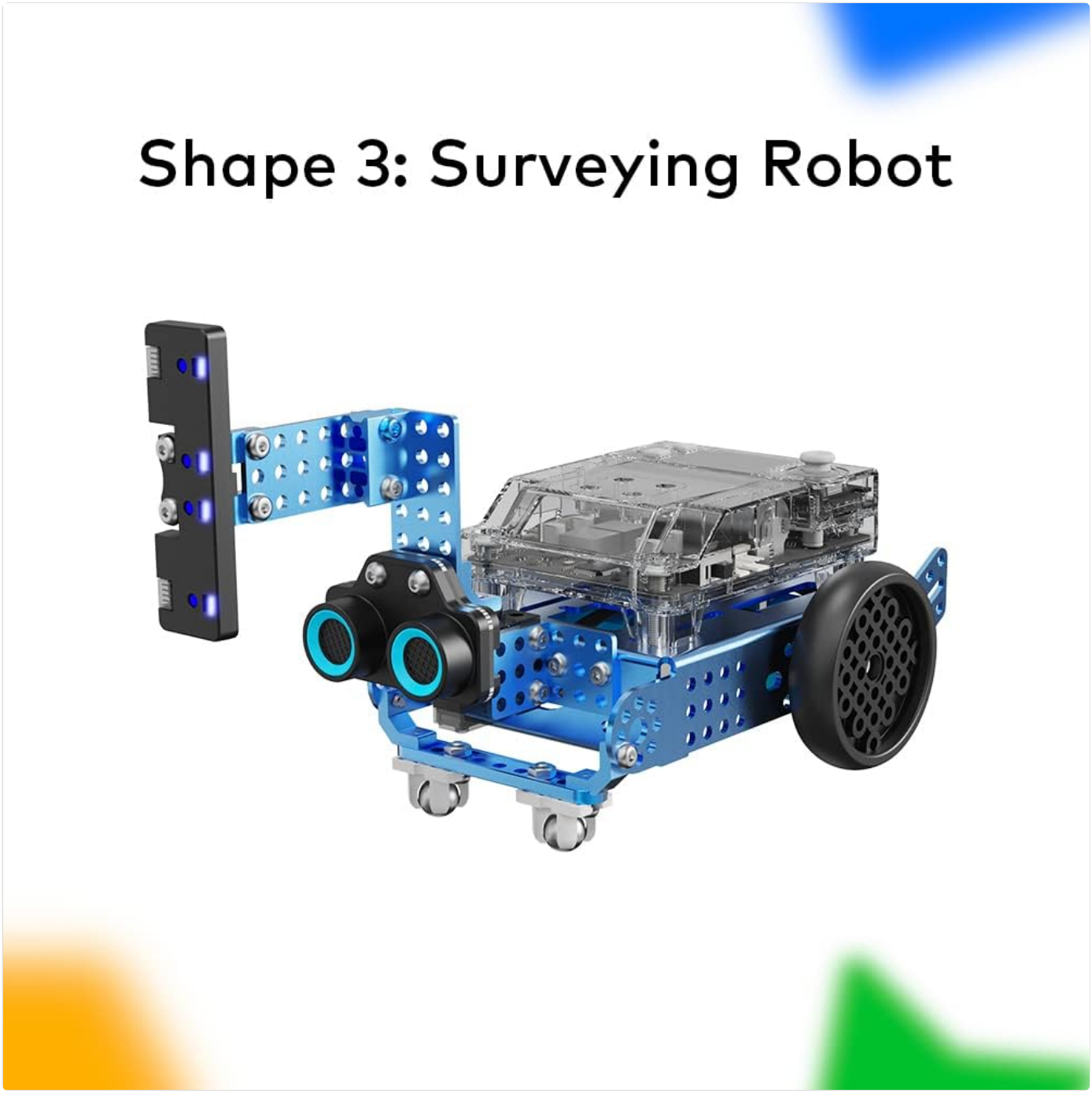

Image: The mBot2 configured as a Surveying Robot, equipped for environmental sensing.

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Video: A short preview demonstrating the assembly process of the Surveying Robot. This video is a 7-second preview.

4. Setup

After assembling your desired robot form, connect it to your mBot2. Ensure all connections are secure. Download and install the mBlock software on your computer or mobile device to program your robot. The mBlock software supports both block-based coding (Scratch) and Python programming.

For wireless communication, a Bluetooth adapter (sold separately) is recommended to connect your computer to the mBot2. Alternatively, a USB cable can be used for direct connection.

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Video: Makeblock mBot Neo Robot Kit STEM Projects - Before You Buy. This video provides insights into setting up and using the mBot Neo, which is compatible with this add-on pack.

5. Operating Your Smart World Robot

The Smart World add-on pack enables your mBot2 to perform various tasks related to smart city, smart farm, and logistics concepts. Each robot form has unique functionalities:

- **Robotic Arm:** Designed for tasks requiring manipulation, such as picking up and placing objects.
- **Robotic Carrier:** Ideal for transporting goods or materials across a designated area.
- **Surveying Robot:** Equipped for sensing and monitoring environments, potentially using color sensors or other inputs.

Utilize the mBlock software to program your robot. The software offers guided activities and challenges to help you explore different real-world scenarios and develop coding solutions. Multiple mBot2 robots can collaborate on projects thanks to their wireless communication capabilities.

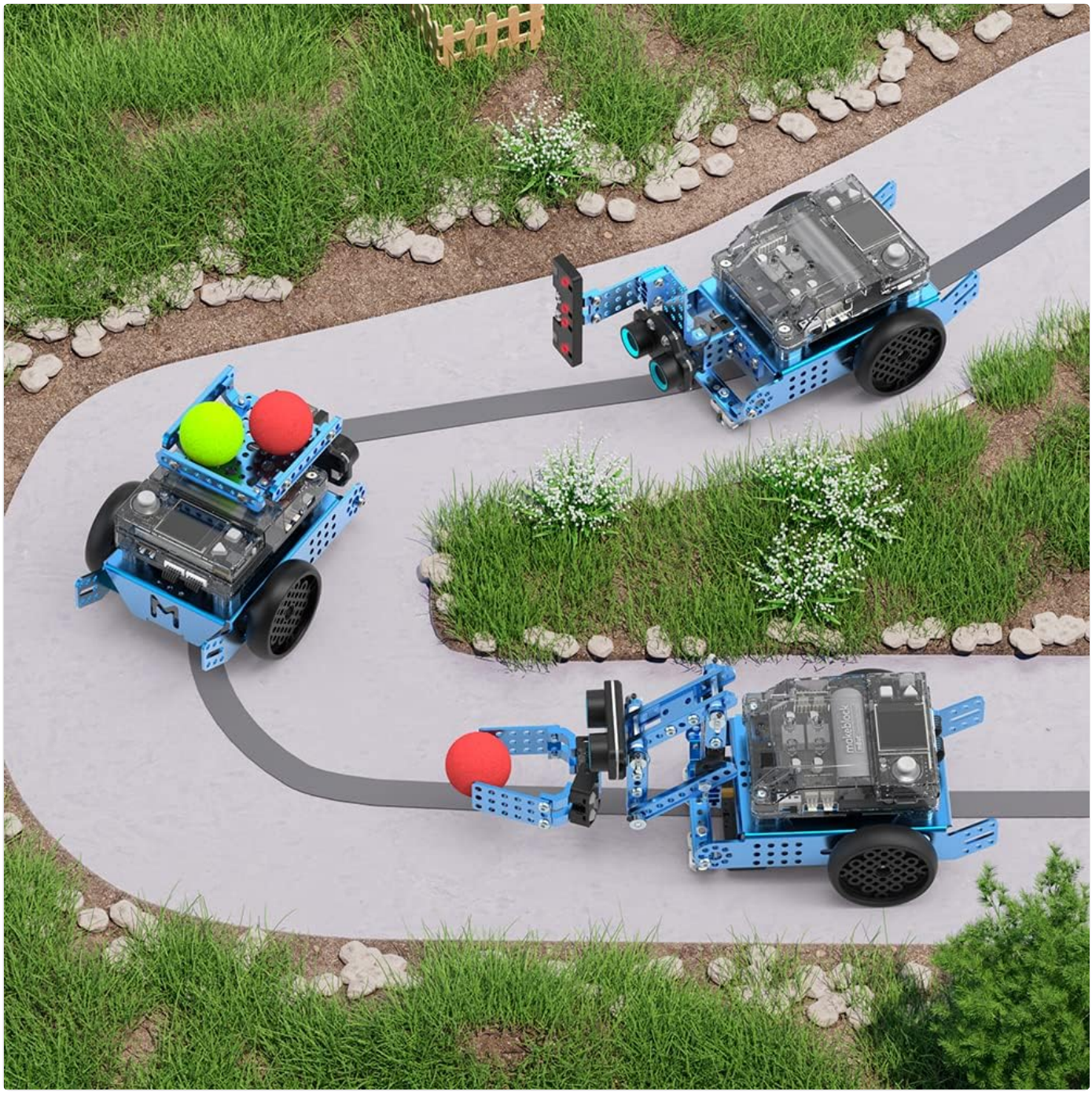

Image: Three mBot2 robots, configured as Robotic Arm, Robotic Carrier, and Surveying Robot, operating on a simulated track.

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Video: Play with mBot2 and Smart World Add-on Pack. This video demonstrates various interactions and functionalities of the mBot2 with the add-on pack.

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Video: Conquer the Ball-clamping Challenge with Smart World. This video showcases a specific challenge involving ball manipulation using the add-on pack.

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Video: Empower AI in Education with Smart World Add-on Pack. This video highlights the educational benefits and AI integration possibilities of the add-on pack.

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Video: Program a Transportation Game with Smart World Add-on Pack. This video demonstrates programming a transportation-themed game using the add-on pack.

6. Maintenance

To ensure the longevity and optimal performance of your Makeblock Smart World Add-on Pack, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to wipe down the components. Avoid using liquids or harsh chemicals.
- **Storage:** Store the components in a dry, dust-free environment when not in use. Keep them in their original packaging or a suitable storage container to prevent loss or damage.
- **Inspection:** Periodically check all screws and connections to ensure they are tight and secure. Replace any worn or damaged parts promptly.

7. Troubleshooting

If you encounter issues with your Smart World Add-on Pack, refer to the following common problems and solutions:

- **Assembly Difficulties:** The assembly process can be intricate. Ensure you are following the building guide step-by-step. Pictures are provided, but some steps may require careful attention. If a part does not fit, do not force it; re-check the instructions.
- **Software Connectivity Issues:** Ensure your mBot2 is powered on and within range of your computer/device. If using a Bluetooth adapter, confirm it is properly installed and recognized. For wired connections, check the USB cable. Restarting the mBlock software or your device can often resolve temporary connection problems.
- **Robot Not Responding to Code:** Verify that your code has been successfully uploaded to the mBot2. Check for any logical errors in your block-based or Python code. Ensure all sensors and actuators are correctly connected.
- **Faulty Components:** In rare cases, a component such as a servo might be faulty. If you suspect a faulty part, contact Makeblock customer support for assistance.

8. Specifications

Feature	Detail
Product Dimensions	27.56 x 2.17 x 0.08 inches
Item Weight	1.25 pounds
Item Model Number	MCP-P04-1AP
Manufacturer Recommended Age	8 years and up
Manufacturer	Makeblock

9. Warranty and Support

For warranty information, technical support, or to purchase replacement parts, please visit the official Makeblock website or contact their customer service. Keep your purchase receipt for warranty claims.
Visit the Makeblock Store for more products and resources.