

[Manuals.plus](#) /

› [Lucky Doug](#) /

› Lucky Doug 12-in-1 STEM Solar Robot Kit Instruction Manual

## Lucky Doug 12-in-1 STEM Solar Robot Kit (Model 214)

# Lucky Doug 12-in-1 STEM Solar Robot Kit

INSTRUCTION MANUAL - MODEL 214

## Introduction

Welcome to the world of robotics and renewable energy! The Lucky Doug 12-in-1 STEM Solar Robot Kit provides an engaging and educational experience for children aged 8 and up. This kit allows you to construct 12 unique robots, each powered by solar energy or a battery, fostering a deeper understanding of science, technology, engineering, and mathematics (STEM) principles through hands-on building and experimentation.

## Safety Information

- **Choking Hazard:** This kit contains small parts. Not suitable for children under 3 years.
- **Adult Supervision:** Adult supervision is recommended during assembly, especially when handling small parts and using tools like wire cutters.
- **Solar Power:** The robot functions best in direct sunlight or under a 100W halogen light. Avoid exposing the solar panel to extreme temperatures or harsh chemicals.
- **Material Safety:** All pieces are made from BPA-free, non-toxic, and skin-safe ABS plastic.

## Package Contents

Your Lucky Doug 12-in-1 STEM Solar Robot Kit includes over 190 easy-to-build pieces, a solar panel, motor, gears, shafts, tires, and detailed instruction manuals. Please verify all components are present before beginning assembly.



Image: All components of the Lucky Doug 12-in-1 STEM Solar Robot Kit, including plastic parts on sprues, a solar panel, motor, wires, and instruction manual.

## Assembly Instructions

The kit allows for the construction of 12 different robot models, ranging from entry-level to senior-level complexity. Each model provides a unique building challenge and demonstrates different mechanical principles. Follow the step-by-step instructions provided in the manual for each specific robot design.

# 12-in-1 SOLAR ROBOT KIT

## Entry Level

## Senior Level



Image: A visual guide to the 12 different robot models that can be constructed from the kit.

### General Assembly Tips:

- **Part Preparation:** Carefully detach each piece from its plastic frame using a wire cutter or small hobby knife. Ensure all excess plastic is trimmed to allow for smooth movement and proper fit.
- **Follow Diagrams:** Refer to the detailed diagrams in the instruction manual for correct part orientation and connection points. Each part is labeled for easy identification.
- **Gear Alignment:** Pay close attention to gear alignment to ensure smooth operation of the robot's mechanisms.
- **Testing:** After assembling the core motor and solar panel unit, test its functionality in direct sunlight before completing the entire robot.

Image: A close-up of hands assembling the robot, demonstrating the hands-on nature of the kit. Insets illustrate key assembly steps.

### Video Guide: Unboxing and Overview

Your browser does not support the video tag. Please update your browser to view this content.

Video: An unboxing and overview of the Lucky Doug 12-in-1 Solar Robot Kit, highlighting its components and educational

value.

## Video Guide: Detailed Kit Contents

Your browser does not support the video tag. Please update your browser to view this content.

Video: A detailed look at the contents of the solar robot kit, including the various small parts and the instruction manual.

## Operating Instructions

The robots in this kit are primarily powered by a solar panel. Ensure the solar panel is exposed to sufficient direct sunlight for optimal performance. Alternatively, some models may support battery power (not included) for indoor or low-light operation.



Image: Illustration of how the robot can be powered by the sun via its solar panel or by a battery.

### How Solar Power Works:

1. Sunlight hits the solar panels, creating an electric field.
2. The generated electricity flows to the edge of the panel and into a conductive wire.
3. The conductive wire brings electricity to the inverter, where it is transformed from DC to AC, powering the robot.

# How Solar Robot Work

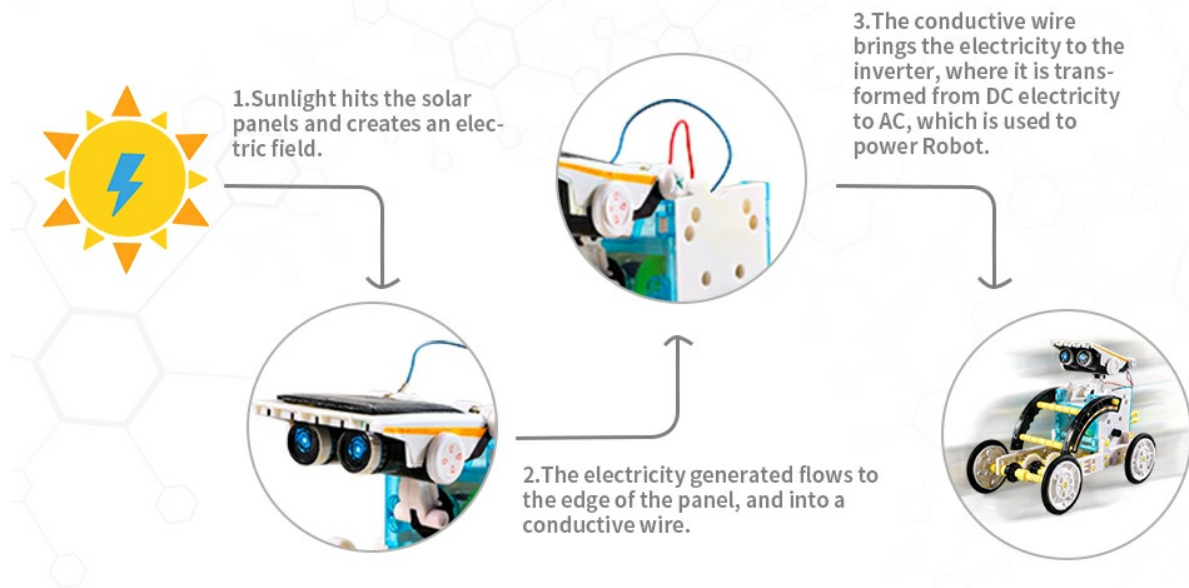


Image: A diagram explaining the process of how the solar robot converts sunlight into motion.

## **Movement Capabilities:**

Depending on the model built, your robot can exhibit various movements, including crawling, rolling, and even floating on water (for specific models like the Surf-bot or Row-bot).



## Can Walk On Land Or Sail At Sea



Image: Examples of robots operating on land and water, showcasing the versatility of the kit.

### Maintenance

- **Cleaning:** Wipe down plastic parts with a soft, dry cloth. Avoid using harsh cleaners or solvents.
- **Solar Panel Care:** Keep the solar panel clean and free of dust or obstructions to ensure efficient power generation.
- **Storage:** When not in use, store the robot and its components in a cool, dry place away from direct sunlight to prevent material degradation.
- **Disassembly:** Parts can be disassembled and reassembled to create new robot models. Handle with care to avoid breakage.

### Troubleshooting

- **Robot Not Moving:**
  - Ensure the solar panel is in direct, strong sunlight.
  - Check all wire connections to the motor and solar panel.
  - Verify that all gears are properly aligned and rotate smoothly without binding.
  - If using battery power (for compatible models), ensure the battery is correctly installed and

charged.

- **Parts Not Fitting:**

- Double-check the instruction manual for the correct part and orientation.
- Ensure any excess plastic from the sprue has been completely trimmed from the part.
- Some connections may require gentle but firm pressure. Avoid excessive force to prevent breakage.

- **Difficulty with Assembly:**

- The assembly process can be challenging. It is recommended that parents and children work together, especially for younger users.
- Refer to the detailed diagrams and step-by-step instructions carefully.

## Specifications

<b>Product Dimensions</b>	11.54 x 7.24 x 2.64 inches
<b>Item Weight</b>	15.2 ounces
<b>Recommended Age</b>	8 years and up
<b>Power Source</b>	Solar power (no batteries required for solar operation)
<b>Number of Models</b>	12 unique robot designs

## Warranty and Support

Lucky Doug products are designed for quality and educational value. For any questions regarding assembly, missing parts, or operational issues, please contact our customer support. While specific warranty details are not provided here, we are committed to ensuring your satisfaction with our products. You can typically find support contact information on the product packaging or through the retailer where the item was purchased.