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› CYOEST 4-in-1 STEM Kits Instruction Manual

## CYOEST B08MWPVNDK

# CYOEST 4-in-1 STEM Kits Instruction Manual

Model: B08MWPVNDK | Brand: CYOEST

## INTRODUCTION

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The CYOEST 4-in-1 STEM Kits offer an engaging and educational experience for young inventors. This kit allows for the construction of four distinct models: a Solar Powered Car, a Solar Powered Fan, a Wind Powered Car, and a Wooden Electric Glider Airplane. Designed to stimulate curiosity and creativity, these kits provide hands-on learning about basic circuitry, mechanics, and renewable energy principles. This manual provides detailed instructions for assembly, operation, maintenance, and troubleshooting to ensure a successful and enjoyable building experience.



Overview of the four models included in the kit.

## SAFETY INFORMATION

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Please read and understand all safety warnings before beginning assembly or operation. Adult supervision is recommended for children under 12 years of age.

- **Small Parts Warning:** This kit contains small parts which may pose a choking hazard for children under 3 years. Keep all components out of reach of toddlers.
- **Battery Safety:** Always insert batteries with correct polarity (+ and -). Do not mix old and new batteries, or different types of batteries. Remove batteries if the device will not be used for an extended period. Do not short-circuit battery terminals.
- **Electrical Components:** Handle all electrical components with care. Ensure connections are secure to prevent short circuits. Do not attempt to modify the electrical circuits beyond the instructions provided.
- **Solar Panels:** While generally safe, avoid direct prolonged exposure of eyes to the solar panel in direct sunlight.
- **Propellers:** Keep fingers, hair, and loose clothing away from rotating propellers to prevent injury.

## PARTS LIST

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Before starting assembly, verify that all components listed below are present in your kit. Each model's components are individually packaged.



## Gift Box



## 4 DIY Science Kits



## Detailed Instruction Booklet How to assemble step by step!



The kit includes all necessary components for four DIY science projects, along with a detailed instruction booklet and a magnetized screwdriver.

- Wooden parts for various models (e.g., airplane body)
- Plastic chassis/base plates
- Electric motors (various sizes)
- Propellers (red, orange)
- Solar panels
- Battery holders (requires 2x AA batteries, not included)
- Wheels (blue plastic)
- Axles and connecting rods
- Wires and connectors
- Screws and nuts
- Magnetized Screwdriver

- Detailed Instruction Booklet

## SETUP AND ASSEMBLY

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Follow the detailed instructions in the included booklet for step-by-step assembly of each model. The process is designed to be straightforward, requiring no welding.



Engaging in the assembly process, which is designed for easy completion.

### 1. Solar Powered Car

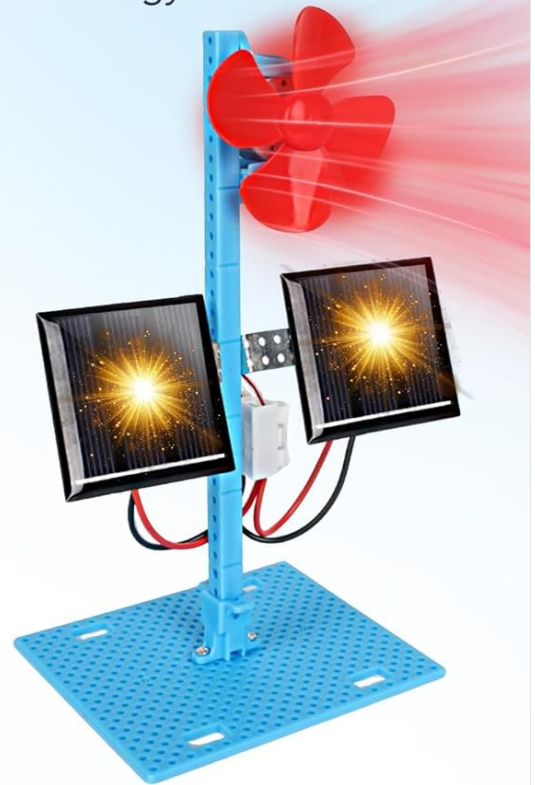
This model demonstrates the conversion of solar energy into kinetic energy. Assemble the chassis, attach the wheels, motor, and then connect the solar panel to power the motor. Ensure the solar panel is exposed to direct sunlight for optimal performance.



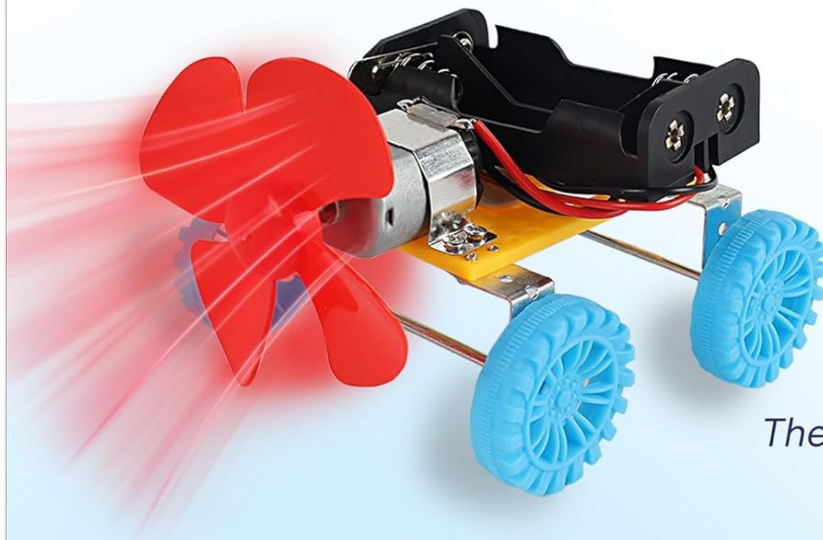
**SOLAR POWERED CAR**  
*Converting Solar Energy Into  
Forward Kinetic Energy*



**SOLAR POWERED FAN**  
*Converting Solar Energy Into  
Kinetic Energy Of Rotation*



**WIND-POWERED CAR**  
*The Principle Of Reaction Force*



Visual representation of the solar-powered car and fan.

## 2. Solar Powered Fan

Learn about solar energy conversion by building this fan. Mount the solar panels onto the stand, connect them to the motor, and attach the propeller. The fan will spin when the solar panels receive sufficient sunlight.



**Solar powered**

Solar panel + Motor

**No battery required**  
**No welding**

Understanding the principles of solar power with the kit.

### 3. Wind Powered Car

This model demonstrates the principle of reaction force. Assemble the car chassis, attach the wheels, and then mount the motor with a propeller at the rear. Power the motor using the battery holder (requires 2x AA batteries, not included) to generate thrust and propel the car forward.

6.5in × 5.9in



## Wooden Electric Glider Airplane

**NOTE : Can not fly,only run on the ground**

## Solar Fan

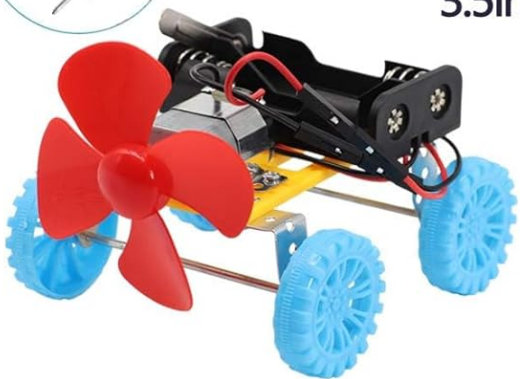
**NOTE : Do not insert the insulation of the wire into the terminal block**



3.9in × 5.1in



3.5in × 3.0in



## Wind Powered Car

Visual guide for the Wind Powered Car and other models.

### 4. Wooden Electric Glider Airplane

Construct this wooden airplane model by assembling the wooden pieces, attaching the wheels, and installing the motor with a propeller at the front. Connect the motor to the battery holder (requires 2x AA batteries, not included). This model is designed to run on the ground, not to fly.

### OPERATING YOUR MODELS

Once assembled, operating your STEM models is simple:

- **Solar Powered Models (Car & Fan):** Place the model in direct sunlight. The solar panels will convert light energy into electrical energy to power the motor. Performance will vary based on sunlight intensity.
- **Battery Powered Models (Wind Powered Car & Glider Airplane):** Ensure 2x AA batteries (not included) are correctly installed in the battery holder. Activate the switch (if present) or ensure proper circuit connection to power the motor and propeller.

## MAINTENANCE

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Proper care will extend the life and functionality of your STEM kits:

- **Cleaning:** Wipe components with a dry, soft cloth. Avoid using water or cleaning solutions on electrical parts.
- **Storage:** Store the disassembled or assembled models in a cool, dry place away from direct sunlight and extreme temperatures.
- **Battery Removal:** If not using battery-powered models for an extended period, remove the AA batteries to prevent leakage and corrosion.
- **Component Check:** Periodically check all connections and screws to ensure they are secure.

## TROUBLESHOOTING

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If you encounter issues with your STEM kits, refer to the following common problems and solutions:

- **Model Not Moving/Propeller Not Spinning:**
  - **Check Connections:** Ensure all wires are securely connected to the motor, battery holder/solar panel, and any switches.
  - **Battery Check (for battery-powered models):** Verify batteries are inserted with correct polarity and are not depleted. Replace with fresh AA batteries if necessary.
  - **Solar Panel Check (for solar-powered models):** Ensure the solar panel is in direct, strong sunlight. Indoor lighting or cloudy conditions may not provide enough power. Clean the surface of the solar panel if it's dusty.
  - **Motor Function:** If possible, test the motor directly with a known good power source (e.g., fresh batteries) to confirm it is functional.
- **Loose Parts:** Tighten any loose screws or connections using the provided magnetized screwdriver.
- **Difficulty Assembling:** Refer to the detailed instruction booklet. Ensure you are using the correct parts for each step.

## SPECIFICATIONS

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Feature	Detail
Product Dimensions	11.8 x 6.5 x 2 inches
Item Weight	10.2 ounces
ASIN	B08MWPVNDC
Manufacturer Recommended Age	10 years and up
Manufacturer	CYOEST
Power Source	Solar Power, 2x AA Batteries (not included)
Number of Models	4 (Solar Powered Car, Solar Powered Fan, Wind Powered Car, Wooden Electric Glider Airplane)

## WARRANTY AND SUPPORT

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For any questions, concerns, or support regarding your CYOEST 4-in-1 STEM Kits, please refer to the contact information provided in the product packaging or visit the official CYOEST brand store on Amazon. While specific warranty details are not provided in this manual, please retain your proof of purchase for any potential warranty claims. Your satisfaction is important to us.