

Solar Energy Working Model - STEM Kit

User Manual

Educational Model

Intended use

A pre-wired solar energy kit that shows how sunlight is converted into electrical energy and then into light, motion and sound, and how energy is stored in rechargeable batteries.

Intended users

Teachers, students (ages 8+ per listing) and homeschool educators. Children should use the kit under adult or teacher supervision.

Read this manual completely before first use and keep it with the product. This document provides general operating, care and safety guidance. Where the product is supplied with manufacturer labeling or instructions, those take precedence. For questions, a replacement copy, or a digital copy of this manual, email sales@scimedstore.com.

1. Safety

Safety warnings and cautions

- Adult or teacher supervision is required for children.
- Do not short-circuit, open, crush or heat the batteries.
- Keep the kit away from water; do not use outdoors in rain.
- Keep fingers, hair and loose items away from the fan blades.
- Do not look directly at the sun while positioning the solar panel.
- Keep small parts away from young children.

2. Package contents

- Solar panel with charging circuit
- Rechargeable batteries
- DC fan
- LED bulb
- Voltage/current meter
- Music module
- Pre-wired assembly board

Check contents on receipt. Report missing or damaged items to sales@scimedstore.com within 48 hours of delivery.

3. Specifications

Recommended age	8+ (grades 4-10)
Power source	Sunlight or bright indoor lamp to charge the batteries
Assembly	Pre-wired

4. Unpacking and setup

- 1 Unpack the kit and check all components are present.
- 2 Inspect wires and connections for damage.
- 3 Insert or connect the rechargeable batteries as marked, observing polarity.
- 4 Place the solar panel in direct sunlight to charge the batteries (or under a bright lamp for slower charging).

5. Operation

Demonstrating energy conversion

- 1 Point the solar panel toward the sun or a bright lamp.
- 2 Connect the meter and observe the panel output; cover part of the panel and watch the reading change.
- 3 Connect the LED bulb to show conversion to light energy.

- 4 Connect the DC fan to show conversion to mechanical energy.
- 5 Connect the music module to show conversion to sound energy.
- 6 Disconnect the panel and run the loads from the charged batteries to show stored energy.

Student activity ideas

- 1 Record meter readings at different times of day or panel angles.
- 2 Compare outputs in sunlight, shade and indoor light.
- 3 Ask students to draw the energy path from sunlight to each output.
- 4 Discuss renewable energy and how batteries store energy.

6. Cleaning and disinfection

- Wipe the solar panel with a soft, dry or slightly damp cloth.
- Do not use solvents or abrasive cleaners.
- Keep electrical parts dry.

7. Maintenance and storage

- Store in a cool, dry place out of direct heat.
- Recharge batteries periodically during long storage.
- Disconnect loads when not in use to avoid draining batteries.
- Check wires for damage before each use.

8. Troubleshooting

Problem	Likely cause	What to do
Nothing works	Batteries flat or wrong polarity	Charge in sunlight and check battery orientation
Low meter reading	Weak light or panel shaded or dirty	Move to direct sunlight and clean the panel
Fan does not spin	Loose connection or obstruction	Check connections and clear the blades
Music module silent	Loose connection or low battery	Reconnect and recharge

9. Disposal

- Recycle rechargeable batteries at a battery collection point.
- Dispose of electronic parts as electronic waste per local rules.

10. Warranty and support

Products are covered by SciMed's standard warranty (12 months from purchase unless a different period is stated on your invoice). Warranty terms: scimedstore.com/pages/warranty.

Support, spare parts and additional copies of this manual: sales@scimedstore.com. Please include your order number and a photo of the product or issue.

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