13-in-1 Solar Robot Kit: STEM Building & Play Guide

An original companion guide from ZoxDeal — building order, solar-power basics for kids, and troubleshooting tips.

Build in This Order (Easiest First)

• 1. **Solar Robot (walker)** — the signature build; proves the kit works within 20 minutes.

• 2. **Solar Car** — fewest moving parts; great second win.

• 3. **Solar Dog** — teaches how the same gears drive a different gait.

• 4. **Solar Boat** — shows the motor spinning a propeller instead of wheels.

• 5. **Windmill** — pure gear train; the clearest lesson in gear ratios.

• 6+ The remaining builds (crab, beetle, plane, etc.) — by now your child reads the diagrams fluently.

Explain Solar Power to a 7-Year-Old

• The small dark-blue panel is a **solar cell**: light knocks tiny particles loose inside it, and that flow *is* electricity.

• No batteries, no charging — the robot only moves while light hits the panel. Cover the panel with your hand and it stops. That instant cause-and-effect is the whole lesson.

• Indoors it needs **direct, bright light** (a desk lamp close up, or full sun through glass). Dim room light will not move the gears.

Troubleshooting: When It Does Not Move

• **Not enough light** — the #1 cause. Take it into direct sunlight first.

• **Gears misaligned** — one loose gear kills the whole drivetrain; re-seat every gear until it clicks.

• **Solar panel upside down** — the dark cells must face the light source.

• **Motor wires loose** — press the panel's contacts firmly into the motor terminals.

• **Wheels binding** — check nothing rubs the chassis before blaming the motor.

Safety & Care

• **Small parts — not for children under 3.** Supervise younger builders.

• Keep the solar panel out of prolonged water exposure; wipe dust off the cells for full power.

• Store screws and tiny gears in the box tray — a lost pinion gear ends the day's build.

Created by ZoxDeal as a free companion to our solar robot kit review. No batteries were harmed in the making of this guide.