

Snap Circuit Green Energy



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STEM-CTE HUB



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Snap Circuits Green Energy

Learn the basics of electronics and modern alternative energy. Explore clean energy concepts, such as electric cars, windmills, and hand-generated power. Includes full-color manual and separate “Think Green” educational manual that explains environmentally-friendly energy including geothermal, hydrogen fuel cells, wind, solar, tidal, hydro, and others. Perfect for environmentalists and future engineers!



Grade Level

3rd - 12th grades

Group Size

1 - 3 students per group

Time Duration

20 - 60 minutes

Content of Kits

Components

- 10 Complete Snap Circuit Green Energy Kits
 - 10 pouches with circuitry components
 - 10 build plates
 - 10 liquid holders
 - 10 mini cars
 - 10 work books



Usage

Getting Started

1. Ensure the kit is complete. There should be 10 of each: zippered pouches of circuitry components, liquid holders, mini cars, build plates, and activity guides.
2. Ensure all USB rechargeable battery packs are fully charged before class. There is one in each small circuitry component pouch. The battery pack is gold in color.
3. Review the activity guides to ensure familiarity with the operation of Snap Circuits Green Energy before leading a class activity.
4. For activities seen included Snap Circuit Green Energy activity guide. Located in the same pouch as the build plates.
5. Break students into groups of 1-3 students, each Snap Circuits Green Energy kit accommodates up to 3 students.

Storage

- Please ensure all kits are deconstructed and components are returned to the same pouch they came in before storing. This ensures the completeness of each kit from activity to the next.
- Store in a dry space

Troubleshooting

- **See the Snap Circuits Green Energy activity guides for common troubleshooting needs.**



Learning Extensions

STEAM Connections: Engineering - Math - Science

Learning Objectives:

- Understand the basics of electrical circuits, including how components like switches, motors, LEDs, and batteries work together to create functioning systems.
- Explore alternative and renewable energy sources such as solar power, wind turbines, and hand-crank electrical generation.
- Learn how energy can be generated, stored, transferred, and measured in different forms through direct experimentation.
- Apply scientific reasoning to design, test, and troubleshoot circuit builds that produce light, sound, motion, and other outputs.
- Connect concepts of energy efficiency, sustainability, and environmental impact with real-world technologies and solutions.

Career Connections:

- **Electrical Engineer** – Designs, tests, and improves electrical systems and circuit-based devices using principles similar to those explored in Snap Circuits.
- **Renewable Energy Engineer** – Works on solar, wind, hydro, and other green energy systems – the same kinds of clean technologies students build and investigate.
- **Product Designer/Technician** – Applies hands-on prototyping and circuit building skills to create consumer electronics, green tech products, and educational tech tools.
- **Energy Analyst/Technologist** – Evaluates energy production, storage, and consumption data to optimize sustainable solutions.

Essential Employability Skills:

- Analytical Thinking
- Problem-Solving
- Numeracy & Measurement
- Technical Communication
- Collaboration & Teamwork





Resources and Accessibility

Safety Guidelines

- **Battery Safety:** Keep the battery pack dry. Avoid short-circuiting the battery pack. Remove USB battery pack from charging port if it begins to overheat.
- **Supervision Recommended:** Adult or educator supervision is advised, especially when introducing new components.
- **Caution of Water Near Circuits:** Keep the work area dry and avoid using the kit near drinks or damp surfaces.
- **Proper Handling:** Do not force parts together; all components are designed to snap on and off easily.

Accessibility

- **Color-Coded & Labeled Components:** Large, color-coded pieces with clear labels help support visual learners and students with reading challenges.
- **No Tools Required:** Snap-on design requires no fine motor-intensive wiring, making it easier for students with motor skill differences.
- **Paced Learning with Guides:** The activity guides provide visual step-by-step instructions for scaffolded learning.
- **Flexible Roles:** Allow students to rotate between roles like builder, note-taker, and tester to accommodate diverse learning needs.
- **Hands-On & Visual:** Circuit building supports kinesthetic and spatial learners who benefit from physical manipulation and seeing cause and effect in real-time.

Library Catalog



Library Resources



Feedback

QR to feedback survey

