# Snap Circuits Kits for Power Protectors 4-H STEM Challenge Kits

### Background

There are >500 project activities with your Snap circuit kits. This guide identifies a subset of projects that align with the Power Protectors 4-H STEM Challenge Kit. Introducing real-world applications while teaching content and skills increases the likelihood that learners will be able to transfer knowledge and skills to situations beyond the initial learning experience. Presenting these applications can also help students see the value in learning more about circuits, and perceived value is associated with higher motivation.

### Materials

### Snap circuit kit(s)

* AA Batteries

### Applications of circuits in energy consumption and clean energy generation

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1. ***Energy efficient spaces***

Knowledge of different electrical components can inform design of technologies that make our spaces more energy efficient.

* 107, 272, 322 (example applications: turn on and off lights based on sunlight; close blinds/curtains based on light)
* 225-227, 263, 291, 300 (example applications: incorporate delays or timers into devices or appliances)

1. ***Green energy***

Advances in energy storage and transmission are critical for integrating renewables into the power grid.

* 203-205 (example application: developing better batteries)
* 215, 235, 252 (example application: store electricity generated by wind turbines or solar panels for later use)

### References

1. Elenco Electronics, Inc. Electronic Snap Circuits (Experiments 1- 101) Manual
2. Elenco Electronics, Inc. Electronic Snap Circuits (Experiments 102-305) Manual
3. Elenco Electronics, Inc. Electronic Snap Circuits (Experiments 306-511) Manual