

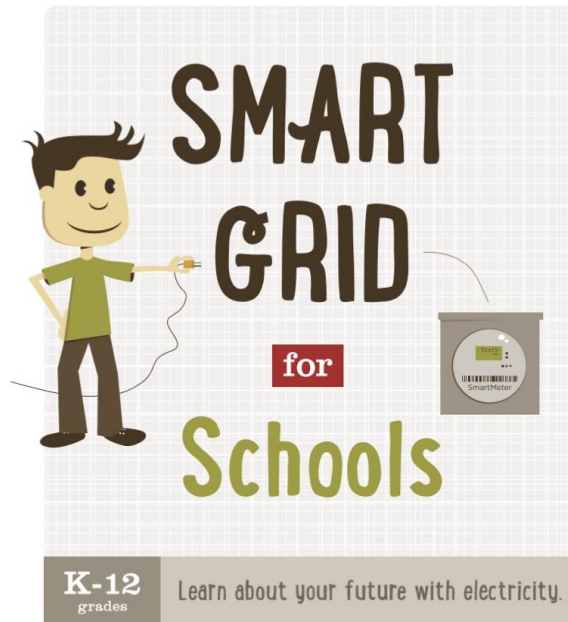
Smart Grids for Schools Brochure Details



SMART GRID for Schools

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SMART GRID for Schools

Illinois State University has designed and implemented the Smart Grid for Schools program which allows children and adults to learn about the new Smart Grid technology that is currently being installed by the electrical utility companies in your area. This program engages students, kindergarten–12th grade, with Smart Grid in a fun, hands-on way and can be used to address many academic standards from several disciplines.

What is Smart Grid?

Smart Grid is an electricity delivery system that uses special switches and meters to communicate with the electric utility. This two-way communication technology improves reliability and will allow customers to monitor their usage and prices. Customers will be able to save money and enhance sustainability.

Smart Grid technology will be soon be on all houses, so it is important that everyone knows about it. Students can also be bridges to help their parents and grandparents understand and use Smart Grid technology.



Smart Home Technology

The home of the future is available today. The Smart Homes are table-top homes packed full of the latest smart home technology. Every house contains a multitude of sensors that can be programmed to report conditions to the home owner and/or automatically operate various systems. Each Smart Home contains its own Wi-Fi system and tablet. They also contain the following:

- Smart Meter
- Programmable Heating and Air Conditioning system
- Programmable outlets that also measures energy use
- Lights that change color
- Light sensor
- Water Sensor
- Security System with camera
- Electric car
- Wind turbine

Smart Grid Construction

The Construction Set contains all the parts necessary for students to make their own electrical grid. The curriculum (available in PDF and video formats) guides the students through the chronological development of modern power starting with the steam engine in the 1760s and progressing through the Smart Grid of today. They place the components and hook up the wires to get power to every customer. They can then make their grid "smart" by adding sensors and switches. Components include the following:

- Power Company Headquarters Office building
- Nuclear, Natural Gas, Coal, and Renewable power plants
- High Voltage Transmission towers
- Substations
- Low Voltage Distribution poles
- Factories requiring 3-phase electricity
- Commercial buildings requiring 3-phase electricity
- Light commercial buildings
- Houses
- Switches
- Smart Grid Monitor
- Wire, wire cutter/stripper, and screwdrivers



Reserve the Smart Grid for Schools Program

The entire program is loaned to schools, museums, or other organizations free of charge. The set arrives via common carrier on a Thursday or Friday and is shipped back 2 weeks later. All shipping is free. Curriculum is available for free download from the website. It is arranged K-2, G3-5, G6-8, and G9-12. Scheduling is also completed through the website. Training is required before taking delivery but a stipend is paid for the training. Also, a stipend is available for the additional time and effort of using the program, packing it up, and submitting the required data.

A complete Smart Grid for Schools set consists of the following:

- Construction tote containing four grid lines (4 students each for 16 total)
- Four Smart Homes (4 students each for 16 total),
- Four hand-crank generators
- Steam engine

