

## TAC Lesson Plan Template

<b>Name:</b> J. Minton	<b>School/Grade/Subject:</b> RES/8th/Science	<b>Date:</b> June 2015
<b>Lesson Title: Power Generation to Energy Consumption</b>		
<b>Standards &amp; Objectives:</b> LS 6: Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression. GLE 0807.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data. GLE 0807.T/E.1 Explore how technology responds to social, political, and economic needs. CLE 3202.Inq.4 Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias. CLE 3202.Inq.5 Compare experimental evidence and conclusions with those drawn by others about the same testable question. CLE 3202.2.4 Probe the fundamental principles and applications of electricity.		
<b>Tools/Resources Needed For Lesson:</b> KELVIN® Power Grid Electrical Distribution Lab Cardboard, LED lights, wire, balsa wood sticks Wind turbines, Solar panels Multimeters		
<b>Lesson Summary:</b> “Help students explore how electrical energy arrives at its final destination, as well as introduce alternative sources of energy. Each student will construct a model home from the pattern provided. The students will then assemble a simple LED and resistor light circuit that is installed into the model house. The model then snaps into the power grid base and picks up current from overhead wires. Students can take measurements using a multimeter. Students can then take their house off the grid and supply electrical energy with solar voltaic cells and even the optional wind turbine generator.” (Kelvin website) Students will be creating a small scale power grid in order to study the makeup, power generation, transmission to energy consumption.		
<b>Digital:</b> N/A		
<b>Non-Digital:</b> KELVIN® Power Grid Electrical Distribution Lab Instructions Wind turbines, solar panels, lab equipments Multimeters		
<b>Collaboration:</b> Students will be working with a partner to build and wire their houses before attaching them to the grid. They will be working on transmission towers and power generation sites, then the class will put all the components together to complete the grid from generation to consumption.		

**Back-Up Plan:**

N/A

**Assessment/Outcome:**

This project will be assessed on many levels. The house properly wired, the wind turbine with an electrical output, wiring the solar array correctly for an electrical output, the wiring of the neighborhood to the grid and the successful power generation to light all the houses. They will have a diagramming component to explain the process of each step.

**Reflection:**