

TAC Lesson Plan Template

Name: J.Minton	School/Grade/Subject: RES/8th grade/Science	Date: June 2015
Lesson Title: Solar Simulation		
Standards & Objectives: W 6: Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others. GLE 0807.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data. CLE 3202.T/E.3 Explain the relationship between the properties of a material and the use of the material in the application of a technology. CLE 3202.2.3 Examine the applications and effects of heat energy. CLE 3202.2.4 Probe the fundamental principles and applications of electricity.		
Tools/Resources Needed For Lesson: Computer myDaq myGrid LabView		
Lesson Summary: Students will take the working knowledge from the previous lesson and apply some of the skills by participating in solar simulations. The Energy City simulation will give students the opportunity to work with their own “cities” while adding the types of energy sources (nonrenewable/renewable) to create a sustainable city. The solar power simulator gives students the opportunity to turn off/on a solar panel controlled system, change the amount of sunlight that hits the panels, and control the load. The myDaq/myGrid system simulated the control panel of a power generation unit while have a miniature tangible system to manipulate.		
Digital: http://engineering-games.net/engineering-games/67/energy-city (Energy City) http://www.solarpowersimulator.com/index.php (Solar Panel Simulation) LabView (on computers)		
Non-Digital: myDaq (USB into computer) myGrid (hooked into myDaq)		
Collaboration: Students will work in partners to create their energy cities and compare them to their peers to see the configuration of sustainable cities. Each group can come up with their graphs and charts that break up their nonrenewable/renewable setup. Students will also look at the simulator to create patterns of load to solar output using the simulations.		

Back-Up Plan:

If the technology is not available, they paper copies can be used to create plans so that they can input their designs into the computers when they are online.

Assessment/Outcome:

The writing portion of the simulation that describes their setup and the pros/cons of the system will help to assess the students. They will incorporate background knowledge and justify their choices in setting up their “cities” and the load scenario with the solar power simulation.

Reflection: