**LEWISBURG AREA SCHOOL DISTRICT**

**LESSON PLAN**

**Teacher Name: \_\_\_\_\_Van Wagner\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_AP Enviro**

**Topic: \_\_\_PV solar energy Date of Lesson: \_\_Class #77**

|  |  |
| --- | --- |
| **LESSON ESSENTIAL QUESTION**: | **Big Idea:**  How do living things interact in positive and negative outcomes?  **Essential Question:**  In what ways to humans interfere with animals in the wild? |
| **STANDARD / LEARNING TARGET:** | **Core standards addressed with this lesson:**  **7.4.9.A:**  Compare and contrast the effect of the physical systems on people across **regions** of the United States.  **7.4.9.B:**  Compare and contrast the effect of people on the physical region across **regions** of the United States.  **7.4.12.A:** Analyze the global effects of changes in the physical systems.  **7.4.12.B:** Analyze the global effects of human activity on the physical systems.  **S11.D.1.3.3:** Explain factors (e.g., nutrient loading, turbidity, rate of flow, rate of deposition, biological diversity) that affect water quality and flow through a water system.  **4.8.10.C.** Analyze how human activities may cause changes in an ecosystem.  \* Analyze and evaluate changes in the environment that are the result of human activities.  \* Compare and contrast the environmental effects of different industrial strategies (e.g., energy generation, transportation, logging, mining, agriculture). |
| **ACTIVATING STRATEGIES**:  (Anticipatory Set) | Bell ringer: Is Sunlight potential or kinetic energy?  Answer: A little bit of both! Kinetic and potential. Photos are **moving** at 186,000miles per second (kinetic). But the energy lies in the photos (potential) not so much the mass moving.  Solid  Naturally Occurring  Definite Chemical formula  Inorganic |
| **KEY VOCABULARY**: | Hydrologic, volume, velocity, consumption. |
| **RESOURCES:** | Teacher slide show, demonstration, and lecture. |
| **TEACHING STRATEGIES**: | Show video , stop at 1:20  <http://www.youtube.com/watch?v=x4CTceusK9I>  more detail:  <http://www.youtube.com/watch?v=x2zjdtxrisc>  Introduce Lewisburg HS Solar Panels and the online data:  <https://enlighten.enphaseenergy.com/>  Username: [**aaredk@yahoo.com**](mailto:aaredk@yahoo.com)  Password: **WV32DF1SJX**  Pass out PV lab paper and discuss instructions.  Student complete lab (some as a class, some outside, some online).  Closure: Discuss several of the key findings in the lab. How many parking spaces of space? Cost of gas vs. electricity? Other topics? |
| **EXTENDED THINKING ACTIVITY / ASSIGNMENT:** | How does what we studied today relate to our daily lives? |
| **SUMMARIZATION/ CLOSURE:** | Exit Bell Ringer: Over the past week, our PV panels have generated 38.5 kWh. Assume a kWh is worth about $0.10. What is the value of the electricity we have generated so far?  Answer: 38.5 kWh x $0.10 per kWh = $3.85  Not too impressive….but what if we had 100 times the panels over the course of 1 year?  $20,020 !!!!! |