**LEWISBURG AREA SCHOOL DISTRICT**

**LESSON PLAN**

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

**Topic: \_\_\_Bees Date of Lesson: \_\_Class #69**

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| **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) | ell Ringer- What insect pollinates plants that make 1/3 of our food?  **Answer**:  Honeybees |
| **KEY VOCABULARY**: | Hydrologic, volume, velocity, consumption. |
| **RESOURCES:** | Teacher slide show, demonstration, and lecture. |
| **TEACHING STRATEGIES**: | Discuss background on Bees.  Show videos  and  <http://video.google.com/videoplay?docid=-5010506558221083461&q=colony+collapse+disorder&ei=BE0XSMXaDqjsrAKFu6TzBw>  Longer: <http://www.ars.usda.gov/is/video/asx/ccd.broadband.asx>  News Article, students read RCode  <http://scientificbeekeeping.com/sick-bees-part-1/>  Students use scientific method to attempt to solve the bee colony collapse problem.  1. define problem  2. create hypothesis  3. how would you test this? |
| **EXTENDED THINKING ACTIVITY / ASSIGNMENT:** | Chapter 16 questions |
| **SUMMARIZATION/ CLOSURE:** | Exit bell ringer- why are bees important to humans?  Pollination of our crops  1/3 of our food comes from pollination. Bees do 80% of that pollinating. |