**LEWISBURG AREA SCHOOL DISTRICT**

**LESSON PLAN**

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

**Topic: \_\_\_biobottles \_\_\_\_ Date of Lesson: \_\_Class #9\_\_\_**

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| **DESIGN QUESTION FOCUS** | Introducing New Knowledge | Deepening or Practicing | Generating & Testing Hypotheses |

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| **LESSON ESSENTIAL QUESTION**: | How do we balance human needs and wants with limited natural resources available?  |
| **STANDARD / LEARNING TARGET:** | * Describe the resource use by students in highly developed countries
* Contrast this with resource use by people in less developed countries.

Describe the three most important factors that determine human impact on the environment. |
|  **ACTIVATING STRATEGIES**:(Anticipatory Set) | Bell Ringer: When has the rate of human population growth been the fastest? (In people / year)a) prior to 1930b) 1930 – 1960c) 1960 – 1975d) 1975 – 1999e) since 1999Ans: D) see page 3 for more detail  |
| **KEY VOCABULARY**: | observation, hypothesis, variable, independent variable, qualitative observation, quantitative observation, data, conclusion, scientific law, scientific theory, constant, inference, prediction, |
| **RESOURCES:** | Teacher slide show, demonstration, and lecture.  |
| **TEACHING STRATEGIES**: | Build bio bottles!Begin by defining your goal. Will your biobottle be aquatic or terrestrial focused?Your bottle must include all of the following:An air-tight bottleWaterSoilRocksLiving plantsCompost material (leaves / dead plants)Optional: Other living organisms (no fish, reptiles, mammals or BIRDS!)Go to Huffnagle park to collect materials / specimens.Return to class. Set bio bottles up in rear of classroom above lab work area. Label your bottle!Check homework while students build biobottles.Begin journal in AP notebook.DateRecord EVERYTHING that went into bottle as well as general starting conditions in bottle.IT is your responsibility to continue journal EVERY APES class. If you are absent, stop in the 1st chance you are back and record appropriate date. Return exams for students to do corrections for ½ credit. |
| **EXTENDED THINKING ACTIVITY / ASSIGNMENT:** | Chapt 3 questions even |
| **SUMMARIZATION/ CLOSURE:** | Exit Bell Ringer: Who’s bottle is MOST terrestrial and who’s is MOST aquatic in your class? |
| **ADAPTATIONS for****HISTORICALLY UNDERPERFORMING STUDENTS** | Instructions will be given orally as well as in written form.I will continue to develop close personal relationships with my students to better identify ways to reach each learner.  |
| **FORMATIVE ASSESSMENT** | Teacher will check for lab completion. Unit 1 exam will be returned and students can make corrections to question they got wrong for credit.  |