

Unit 2 Essay Questions  
APES  
Lindemulder

Directions: Answer each of the following questions on a separate piece of paper.

1. Much of the energy produced is lost before it can become useful. Explain how energy efficiency, or energy productivity, and the second law of thermodynamics may be useful in a discussion with another person on how to reduce CO<sub>2</sub> and other greenhouse gas emissions.
2. Differentiate between a hypothesis, a guess, and a theory. Explain why it is important for non-scientists to understand how scientists use these terms when discussing something like global warming or evolution. Why might it be incorrect when a non-scientist dismisses a topic like these as being “just a theory”?
3. Apply the concept of the Range of Tolerance to the following scenario. Global warming, or global climate change, may cause the desert southwest of the U.S. (Arizona, New Mexico, etc.) to become more like Kansas and Nebraska. The latter two states may, in turn, become more like Arizona and New Mexico. What part will the Range of Tolerance play in the changes that will occur in animal and plant populations?
4. Mining provides important and useful minerals for our daily lives. However, most of us would be surprised to learn it requires the creation of six tons of mining waste to get enough gold to make two wedding rings. Should mining companies be required to repair the damage they do to the environment, even if wedding rings get more expensive? Explain your reasoning.

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