Life Cycle Assessment Notesheet C. Kohn, Waterford WI

Name: Hour Date:

Date Assignment is due: Why late? Score: + ✓ -  
 Day of Week Date If your project was late, describe why

**Weekly Schedule: See Board and record**   
Mon  
  
  
  
Tues  
  
  
  
Wed  
  
  
  
  
Thurs  
  
  
  
  
Fri

Is it possible for a fuel to need more energy to make the fuel than the fuel itself provides?  
  
Explain:

Is it possible for a fuel to need less energy to make the fuel than the fuel itself provides?  
  
Explain:

Hypothesize what types of fuels require the most energy to be produced:

Hypothesize what types of fuels require the least energy to be produced:

*Page through this notesheet and your notes. Then answer the questions below:*  
Circle one: *I need to review my notes & practice before the quiz.* Definitely – Yes – Sort of - No

Circle one: *I have never seen or heard of some of these concepts.* Definitely – Yes – Sort of - No

Circle one: *This may be a challenging unit for me personally.* Definitely – Yes – Sort of - No

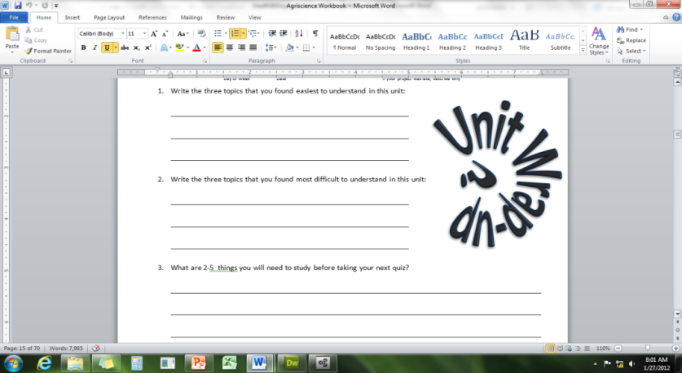
Circle one: *I may need extra strategies for some topics/vocab.* Definitely – Yes – Sort of - No

**Directions**: Use the accompanying PowerPoint (*available online*) to complete this sheet. This sheet will be due upon the completion of the PowerPoint in class. These assignments are graded on a +/✓/- scale.

1. When assessing a fuel, one of the main considerations is whether or not that fuel is
2. A sustainable fuel is one that
3. Why is fossil fuel not considered a sustainable fuel?
4. One of the main concerns of the use of fossil fuels is
5. For every gallon of gasoline produced, it takes the energy equivalent of
6. The more fossil fuels produced, the that are needed
7. Another main concern is the release of
8. To keep CO2 beneath 400 ppm (the current level), what is necessary?
9. Why is this necessary?
10. What is shale oil?
11. What is fracking?
12. True or False: the United States is now one of the leading producers of fossil fuels.
13. If this is true, why are we concerned about the amount of fossil fuels available?
14. While US oil production (led by shale oil) will show an initial surge, by 2020
15. What are two benefits of shale oil?
16. What are four major drawbacks of shale oil?
17. Why are fossil fuels widely used if they are not sustainable? Provide 5 reasons:
18. Shale oil is linked with large methane emissions; how does methane compare to CO2 as a greenhouse gas?
19. What nine characteristics will be needed by an alternative to fossil fuels? Summarize briefly below:
20. What is sustainability?
21. Summarize the three components of sustainability below:
22. Briefly summarize the five common themes of sustainability:
23. What is a Life Cycle Assessment?
24. What five areas does a Life Cycle Assessment consider?
25. What is the difference between Inputs and Outputs in a LCA?
26. Summarize how a bottle of water compares to tap water in regards to a life cycle assessment:   
      
    Bottled Water Inputs:   
      
       
      
    Tap water Inputs:   
      
       
      
    Bottled Water Outputs:   
      
       
      
    Tap water Outputs:
27. When choosing between the options of fuels, it is important to consider
28. No one fuel is , and all have both
29. While fossil fuels are and have high rates of from their acquisition   
      
    and use, many renewable fuels such as and have   
      
    their own problems, including
30. While it is unlikely that   
      
    and while it is likely fossil fuels will continue   
      
    it is and to   
      
    that the US

*For each of the following, summarize the type of fuel and describe the benefits and drawbacks. Don’t write word for word – shorten by summarizing but be sure to cover all key points, benefits, and drawbacks of each fuel.*

1. Petroleum – summary:   
     
      
     
   Benefits:   
     
      
     
   Drawbacks:
2. Shale oil – summary:   
     
      
     
      
     
   Benefits:   
     
      
     
      
     
      
     
   Drawbacks:
3. Biofuel:   
     
   Conventional:   
     
   Advanced:   
     
   Cellulosic:   
     
   Biomass-based:   
     
   Benefits:   
     
      
     
      
     
      
     
      
     
   Drawbacks:
4. Electricity – summary:   
     
      
     
   Benefits:   
     
      
     
   Drawbacks:
5. Based on these results, which fuel do you think is the best option for widespread future use?   
     
   Why?
6. Based on these results, which fuel do you think is the worst option for widespread future use?   
     
   Why?

Unit Wrap-up C. Kohn, Agricultural Sciences - Waterford WI

This page is designed to help raise your grade while enabling you to develop skills you will need for after high   
school. You will need to complete every question and blank in order to receive full credit for your notes. Note: if you cannot come up with a strategy to remember a difficult concept on your own, see your instructor for help.

1. What is a topic or concept from this unit that you found to be more challenging? Write or describe below:  
     
      
     
   In the space below, create a mnemonic, rhyme, analogy, or other strategy to help you remember this particular concept:
2. Circle the most appropriate response. You will only be graded on whether or not you completed this section.

Circle one: *I used my notes outside of class to prepare for the quiz.* Definitely – Yes – Sort of - No

Circle one: *I took extra notes in the margins for very difficult concepts.* Definitely – Yes – Sort of - No

Circle one: *I created a personal strategy for at least three difficult items.* Definitely – Yes – Sort of - No

Circle one: *I was very involved and actively studying during the quiz review.* Definitely – Yes – Sort of - No

Circle one: *I think I will be satisfied with the quiz grade I received this week.* Definitely – Yes – Sort of - No

Circle one: *I might need to meet with the instructor outside of class.* Definitely – Yes – Sort of - No