Plant Adaptations Notesheet *by C. Kohn*

Name: Hour Date:

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

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

1. All life on this planet depends on plants and their services. Explain why plants are so important to the natural world and to people with three reasons in the spaces below:   
     
   1   
     
      
     
   2   
     
      
     
   3
2. What are the three parts of all plants?
3. Roots are how
4. Roots also
5. Some plants also
6. What is the purpose of root hairs?
7. How do plants get water into their cells?
8. Describe the two ways in which plants keep themselves upright:   
     
   Turgor Pressure:   
     
      
     
   Lignin:
9. The stem also serves as a sort of for
10. List and describe the function of two key kinds of cells found in the stem and other tissues in the plant:   
      
     Description:   
      
       
      
     Description:
11. Leaves produce
12. Leaves can also serve as
13. What are stomata?
14. Stomata allow water to from the leaf and allow   
      
    to
15. In order for a plant to function, what three main functions must it perform?   
      
    1   
      
    2   
      
    3
16. How do the cells of the roots get water out of the soil?
17. As long as there is enough and as long as   
      
    the roots have   
      
    the roots will
18. How is water moved through a plant once it is in the roots? Define   
      
    transpiration:
19. Transpiration pulls water , causing   
      
    in the throughout the rest of the plant to
20. Besides moving water, how else does transpiration help the plant?
21. Why are the phloem cells important to cells in the plant that cannot photosynthesize?
22. Phloem cells are part of the
23. These veins
24. Leaf veins also contain that
25. When a plant needs CO2, it will
26. If a plant is losing water too quickly, what will it do?
27. What happens to photosynthesis in most plants if they close their stomata?   
      
     Why?
28. What are lenticels?   
      
    How do lenticels aid a plant?
29. 85% of plants are C3 plants. What does “C3” refer to?
30. What is the major disadvantage of a C3 plant?
31. Summarize the two reasons why photosynthesis decreases in hot weather in C3 plants:   
      
    1   
      
       
      
    2
32. What is Rubisco?
33. What does Rubisco do differently when CO2 concentrations are low?

* 1. What impact does this have on sugar production?

1. What are two examples of C4 plants?
2. In C4 plants, CO2 is absorbed by with a   
     
    . Inside these specialized cells   
     
      
     
   This enables the plant to
3. Why are they called “C4” plants?
4. Because C4 plants can   
     
   it also means that
5. Will both C3 and C4 plants close their stomata in hot weather? If both close their stomata, why is it that the photosynthesis of a C4 plant is not affected in hot weather but the photosynthesis of a C3 plant is?
6. When a C4 plant closes its stomata, what is the source of carbon for the Calvin Cycle?
7. If C4 plants can produce sugars even when they have to close their stomata, why are most plants still C3 plants?
8. Under what conditions are C3 plants more productive than C4 plants?   
     
   Under what conditions are C4 plants more productive than C3 plants?
9. What are examples of CAM plants?
10. How is a CAM plant similar to a C4 plant?
11. How is a CAM plant different from a C4 plant?
12. What are legumes?

1. Legumes include
2. If 80% of the air is made of nitrogen, why are legumes so important?
3. What happens if an organism does not get enough nitrogen?
4. What is nitrogen used for?
5. In order to be used by living organisms, nitrogen must be
6. What is nitrogen fixation?
7. What are nodules?
8. What actually converts the nitrogen, the plant or the bacteria in its nodules?   
     
   If bacteria are the ones to do all the work of nitrogen fixation, why would they bother to live inside plants?
9. Why would a farmer want to plant legumes?
10. While very little nitrogen is   
      
     , the nitrogen will be added to the soil when
11. Summarize seven other adaptations plants can have:

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

1. Write the 3 topics that you most need to review before the quiz:  
     
   1\_   
     
   2\_   
     
   3\_
2. Create 3 **high-level questions** related to this material   
   (*These questions could be something you still don’t know or questions that reflect understanding that you have now that you did not have before.*)  
     
   1\_   
     
   2\_   
     
   3\_
3. List 6 **vocabulary words** that you did not know before or have not used very often prior to this unit:  
     
   1\_ 2 3

4 5 6

1. In the spaces below, fully write three strategies that will help you to remember specific vocabulary words or topics from this unit. **NOTE**: A strategy is *not* an activity such as reviewing your notes, studying hard, etc. A strategy is a mnemonic, rhyme, analogy, or other brain-based device that is specific to one item from the unit.

1.\_   
  
2.\_   
  
3.\_

1. Circle the most appropriate response. You will only be graded on whether or not you completed this section, so be entirely honest with yourself when completing 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