Name:_____Date:_____

Reading Guide: Chapter 1.2, Themes and Concepts of Biology (OpenStax Biology 2E)

1. From the beginning biology has wrestled with three questions:
   What _____ make something alive?
   How do we find meaningful levels of _____ in its structure?
   How do we _____ the different kinds of organisms?

2. Organisms are highly _____ , coordinated structures that consist of one or more _____.
3. Movement away or toward light is called _____
4. When reproduction occurs, _____ are passed to the offspring.
   Are two parents necessary for reproduction? _____
5. Genes provide instructions for organisms' growth and _____
6. Regulation refers to mechanisms that:
   _____ internal functions
   _____ to stimuli
   cope with environmental _____

7. What is homeostasis? _____
8. All organisms require _____for their metabolic processes.
9. What is the smallest and most fundamental unit of matter? _____
10. What is a macromolecule?_____
    What is an example of a macromolecule? _____
11. What is the difference between a prokaryote and a eukaryote? _____
12. Cells combine to make _____ which combine to make _____
13. All the individuals of a species living in an area is a _____
14. The source of the diversity of life is _____
15. What is a phylogenetic tree? _____

Evolution Connection: Carl Woese and the Phylogenetic Tree

16. The organization of organisms into the five kingdoms was based on _____
17. Carl Woese proposed that life on earth evolved along three lineages, or domains. What are they?
    _____
18. What organisms belong to the domain Eukarya? _____
19. Why was Woese's approach revolutionary? _____

20. Briefly describe what each of the branches of science study:
    Microbiology _____ Forensic Scientist _____
    Neurobiology (neuroscience) _____ Paleontology _____
    Zoology _____ Botany _____