AP Biology **Name:** _____ Block _____

Chapter 1 Guided Reading Notes
Introduction: Themes in the Study of Life

Begin your study of biology this year by reading Chapter 1. It will serve as a reminder about biological concepts that you may have learned in an earlier course and give you an overview of what you will study this year.

Section 1

1. What are **emergent properties?** Give two examples.

2. Life is organized on many scales. Figure 1.3 zooms you in from viewing Earth from space all the way to the level of molecules. As you study this figure, write in a brief definition of each level.

Level	Definition
1 Biosphere	
2 Ecosystem	
3 Community	
4 Population	
5 Organism	
6 Organs/Organ Systems	
7 Tissues	
8 Cells	
9 Organelles	
10 Molecules	

Adapted from Pearson Education, Inc., Campbell Biology in Focus (1st Edition).

3. Our study of biology will be organized around recurring themes. Make a list here of the 4 themes that are presented, and give an example that illustrates each theme. Watch for these themes throughout your study this entire year. This will help you see the big picture and organize your thinking.

4. As you read this section, you will be reminded of things you may have studied in an earlier course. Since this material will be presented in detail in future chapters, you will come back to these ideas, so don't fret if some of the concepts presented are unfamiliar. However, to guide your study, define each of the terms in bold as you come to them.

Term	**Definition**
eukaryotic cell:	
prokaryotic cell:	
DNA:	
genes:	
genome:	

Section 2

5. What two main points were articulated in Darwin's *The Origin of Species*?

6. What did Darwin propose as the mechanism of evolution? Summarize this mechanism**.**

7. Study Figure 1.16 in your text, which shows an evolutionary “tree.” What is indicated by each twig? What do the branch points represent? Where did the “common ancestor” of the Galápagos finches originate?

Section 3

9. What is *data*?

10. Distinguish between quantitative and qualitative data. Which type would be presented in a data chart and could be graphed? Which type is found in the field sketches made by Jane Goodall?

12. In science, how do we define *hypothesis*?

13. A scientific hypothesis has two important qualities. The first is that it is *testable*. What is the second?

14. Are scientific hypotheses proved? Explain your answer!

15. What is a *controlled experiment*?

16. What is a common misconception about the term “controlled experiment?”

17. Explain what is meant by a scientific *theory* by giving the three ways your text separates a theory from a hypothesis or mere speculation.

In the text page 17, complete questions 1-7.