

Biology I Advanced  
Obj Chapter 1  
Biology: Exploring Life

1. List the five characteristics of living things. In complete sentences, describe an example of each. Be able to recognize other examples.
2. Starting with *biosphere* and ending with *subatomic particles*, list the levels of organization found in living things. Use text page 2 for a guide. For each level, name an example. Do not use the example in the book.
3. Write sentences that define and differentiate between *producers*, *consumers*, and *decomposers* as they relate to a web of biological interactions.
4. Describe two major processes of the dynamics of an ecosystem. List three specific examples of each.
5. Differentiate between asexual and sexual reproduction in three different ways.
6. Write a sentence that differentiates between *stimulus* and *response*. Describe an example of a plant responding to a stimulus.
7. Define these terms in a manner that differentiates them from other terms in the list:  

<i>emergent properties</i>	<i>prokaryotic cell</i>	<i>eukaryotic cell</i>	<i>homeostasis</i>
<i>hypothesis</i>	<i>theory</i>	<i>scientific law</i>	
<i>control (group)</i>	<i>experimental group</i>	<i>dependent variable</i>	
<i>independent variable</i>			
8. Draw a diagram that divides organisms into three domains and six kingdoms. Include the name of an organism that belongs to each kingdom. What discussion remains open about the Kingdom Protista?
9. Write sentences that differentiate between "discovery science" and "hypothesis-based science". Give examples of each.
10. Restate this sentence (from page 8) in your own words by citing an example from nature. Do not use an example from the book. *Natural selection occurs as heritable variations are exposed to environmental factors that favor the reproductive success of some individuals.*
11. Describe the scientific method (hypotheses-based) by dividing it into five steps in sequence.
12. In Biology class, what metric unit will be used to measure each of the following? Show the symbol for each unit.  

Length	Mass	Volume	Temperature
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13. Identify the meaning of each of these metric prefixes. Show the symbol for each prefix.  

Kilo-	Milli-	Centi-	Micro-
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14. Calculate the following showing your work and cancelled units:
  - a. How many milliliters in 2.5 L
  - b. How many mm in 2900.  $\mu$ L
  - c. How many L in 200. mL
  - d. How many microliters in 2.0. mL
15. Describe the type of data which would be most appropriate for each of the following:  

Line graph	Bar graph	Pie chart
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16. Given a set of data, be able to produce a line graph using the checklist as a guide.