

Name \_\_\_\_\_

### ENERGY, LIFE AND THE BIOSPHERE READING GUIDE

1. Consider table 2.1 on page 52 and apply the criteria to yourself. Are you living? Provide proof that you satisfy each criteria.
2. What is energy? What form of energy do living things depend upon? What is the portion of chemical energy that is available to do work called?
3. Describe and provide examples of the three ways in which living things use free energy.
4. If you obtain energy from other organisms, you are categorized as what? If you obtain energy from on your own, you are categorized as what?
5. Provide two subcategories of autotrophs and give an example and brief description of each.
6. What is the term that describes the reactions which autotrophs and heterotrophs go through to release the free energy stored in organic molecules?
7. Within ecosystems, autotrophs can be called what? Similarly, heterotrophs can be called what within ecosystems?
8. What becomes of the energy stored in living things when they die?
9. Give examples of biotic and abiotic factors affecting living things in ecosystems.
10. Explain the first law of thermodynamics and the implications it has on all living things in our world.
11. Explain the second law of thermodynamics and the enormous implications it has on all living things in our world.