

# Unit 1 Study Guide

## Chapter 1

1. Know the definition of **ecology** and **ecosystem**.
2. What is **environmental science**? What are the challenges of environmental science?
3. What are **biotic** and **abiotic** components? Be able to identify examples.
4. What has led to humans having a more significant impact on their environment?
5. What is **sustainability**?
6. Know what an **ecological footprint** is and what the number means.
7. Be very familiar with **the tragedy of the commons** and what's going on there. Be able to identify several examples.
8. What are possible ways to *prevent* the tragedy of the commons?
9. Be familiar with the **scientific method**, what is required for a successful experiment and be able to identify strengths of the scientific method – (review Module 3)
10. Be able to **calculate** problems similar to the Summer Suggestion.
11. Know how to convert to and from scientific notation and be able to complete **metric and unit conversions**. Practice!

## Chapter 2

12. Module 4 is a brief review of **Biology** and **Chemistry**. Brush up on the basics.
13. Know what a **system** is and what its properties are.
14. What's the difference between a **positive feedback loop** and a **negative feedback loop**?
15. Which one is represented by **homeostasis**? What is homeostasis? What's an example?
16. Which feedback loop would you expect to be more **stable**?
17. Be able to identify **organic** and **inorganic** compounds.
18. What exactly is the definition of **energy**?
19. What are the two major types of energy?
20. What is **kinetic energy**? Can you identify example?
21. What is **potential energy**? How about some of these examples?
22. What's the difference between **high-quality energy** and **low-quality energy**?
23. Earth is an open system for something. What is it?
24. What is the ultimate source of energy for most ecosystems?
25. Of course you're going to need to know the **first** and **second laws of thermodynamics**.
26. What form does the energy usually take when it is transformed to a lower-quality, more dispersed, less useful energy?
27. According to the second law of thermodynamics, what is happening to Earth's supply of concentrated, usable energy?
28. What is entropy? Which law of thermodynamics does **entropy** refer to?
29. What **ultimately** happened to the peanut during the lab from an **energy point of view**?

## Chapter 20

30. Explain why **GDP** may not be an accurate reflection of the *well-being of a society*.
31. What is the *Kuznets curve*?
32. Be able to distinguish between **natural** and **human capital**.
33. Explain the difference between the *less sustainable* and *more sustainable economies* in Figure 65.6 (Page 708).
34. What is cradle-to-cradle?
35. Distinguish between the various **worldviews**.
36. Be familiar with the multitude of organizations working to protect human and natural capital.
37. Explain the difference between *command-and-control* and *incentive-based* approaches to pollution

control.

38. What is **green tax** and **triple bottom line**?

39. Explain *environmental equity*.

40. Who was Dr. Wangari Maathai?

Now go quiz yourself with the questions on pages **28-29**, **58-63** and **724-726**!