Learning objectives: Chapter 4

Chapter 4* – *Production Ecology: The transfer and storage of energy in ecosystems
Read all sections.

1. What are autotrophs and heterotrophs? How do they differ?

2. What are the 4 types of consumers, and what type of diet do they consume?

3. What happens in a food chain? What is the basic sequence of production and consumption?

4. What are 3 types of ecological pyramids? What are characteristics of each?

5. In what ways are decomposer organisms important components of food webs?

6. What are some generalizations you might make about the relationship between body size and metabolism in organisms?

7. Be able to verbally interpret and explain Figure 4.7 and 4.8.

8. What is PAR?

9. Briefly explain photosynthesis and photosynthetic efficiency. Why is photosynthetic efficiency important? What accounts for variability in efficiency in plants?

10. What is respiration?

11. What are the major factors affecting respiration?

12. What are 2 types of litterfall, and how are they important to energy production and transfer?

13. How do soil fauna aid in decomposition? [long answer]

14. What are major factors influencing litter decomposition in forests?

15. What is the pattern of carbon accumulation in a forest over time?

16. What is CWD? What are 5 functions CWD serves tin PNW forests? Elaborate a bit about each function.

17. What happens to decomposition processes following timber harvest? How does forest management affect energy in the ecosystem?