

Reading list for Bio 185
Fall 2007

I'm providing this list of readings and end-of-chapter questions to help focus your study time outside of class. You are not expected to turn in answers to the questions listed here; use them as a tool to help test your understanding of the material and to help focus you when preparing for class meetings and exams. Note that this is just a general guide to readings; I have likely not listed every single useful page of the book, and areas of the book not listed herein may contain information relevant to the exams.

All readings are from the second edition of Scott Freeman's *Biological Science*.

Introduction, life's domains

Chapter 1, section 3: Overview of diversity
Conceptual review 2 & 3; Discussion 2 & 4

Chapter 27, pages 592-594: Bacteria, Archaea, and Eukarya
Conceptual review 6

Phylogenies and the basics of evolution

Chapter 1, section 2: Quick summary of evolution
Content review 3-5; Conceptual review 4 & 5

Chapter 23. Focus on sections 2 & 4, though 1 has good background and 3 discusses two excellent examples (similar to ones I might use on an exam).
Content review 1, 3-6; Conceptual review 1 & 6; Discussion 2 & 3

Chapter 24, section 2 provides additional information that should help understand selection, and section 3 covers genetic drift and founder events (though we don't need to know how to calculate/interpret allele frequencies).
Conceptual review 6

Introduction to life's kingdoms

This unit is the most difficult in terms of reading, as no single chapter of the book succinctly covers what we're going over in lecture. Instead, the information is spread out amongst many chapters, which you'll need to pick and choose information from; I apologize for this. In general, section 1 of chapters 27-34 provides an overview of the biology of each lineage. While you won't be tested on the minute details of most of what's in section 1 of each chapter, it makes for interesting reading, and much of it is relevant to what we're discussing. Section 4 (or whatever section covers "key lineages") of each chapter introduces details on the major lineages of each kingdom. You are not expected to memorize every detail of every lineage listed in section 4 of each chapter; focus primarily on the lineages we've discussed in lecture.

Chapter 26, while entirely optional, can provide a good historical perspective. See, for example, the figure on pages 564-565.

Chapter 27: Bacteria and Archaea, sections 2 & 4
Content review 5; Conceptual review 6 (look familiar?); Discussion 3

Chapter 28: Protists, section 4 (sections 2 & 3 will help with lab)
Content review 1, 4

Chapter 29: Green plants, sections 2 & 4 (section 3 will help with lab, and other units in the course)

Chapter 30: Fungi, section 2 (up to page 679), section 3 (up to page 686), and section 4 (the rest of sections 2 and 3 will likely help with lab and other units in the course)
Content review 3 & 5

Chapter 31: Introduction to animals, table 31.1, sections 2 & 4 (section 3 has information that will help with lab)
Conceptual review 1; Discussion 3 (focusing on how you'd determine what phylum the animal goes in)

Chapter 32: Protostome animals, sections 4 & 5 (section 2 has some information that will help with lab)
Discussion 2

Chapter 33: Deuterostome animals, sections 4 & 5 (but just the overview of the major lineages; don't worry about the specific sub-lineages introduced). Section 2 has some information that will help with lab. Section 6 is optional, but has information on human evolution, if you're interested in the topic.

Chapter 34: Viruses, read the introduction (i.e, the part before section 1), section 2 (up to page 787), and section 3 (up to page 793)
Content review 3; Conceptual review 4; Discussion

Habitat diversity

Chapter 50: section 3 – both terrestrial and aquatic habitat diversity; section 2 has information on rain shadows
Content review 1 - 4; Conceptual review 4 & 5; Discussion 3

Digestion and nutrient absorption

Chapter 43: Animal digestion, section 3; section 1 page 978 for different types of nutrients
Content review 4 & 5; Conceptual review 2 & 5; Discussion 2

Chapter 36: Root absorption, section 2

Chapter 36: Translocation (movement of sugars through phloem), section 4 and box 36.3
Content review 5 & 6; Conceptual review 4 & 5

Chapter 37: Plant nutrient absorption, sections 1, 3, and 4
Content review 3; Conceptual review 4 (ignoring negative membrane potential), 5, & 6

Metabolism

Chapter 27: Bacterial metabolism, section 3's portion on "Metabolic Diversity" (pages 594-598)

Content review 1 & 4; Conceptual review 1 & 4; Discussion 4

Chapter 41: Metabolic rates in animals, section 3 (this can also help with lab)

Chapter 9: Review of basic Eukaryote metabolism, sections 1 & 5 (rest is optional, assuming you remember Bio 181)

Content review 2, 4-6; Conceptual review 2-6

Photosynthesis and autotrophism

Chapter 10: Eukaryote photosynthesis, sections 1, 2, 3, and 4.

Content review 2-4; Conceptual review 1-6; Discussion 3

Chapter 27: Bacterial photosynthesis, section 3's portion on "Photosynthesis" (pages 597-598)

Content review 2 & 3

Respiration and gas exchange

Chapter 44: Animal respiration, sections 1, 2, and 3 (ignoring the Bohr effect)

Content review 1, 3-5; Conceptual review 1 (focusing on ventilatory), 3-5; Discussion 1 & 4

Chapter 35: Discussion of stomata and trichomes, section 2, page 816

Osmoregulation

Chapter 42: Animal osmoregulation, sections 1, 2 (ignoring details of the shark system), and 3

Content review 1-3; Conceptual review 1, 3, 6; Discussion 3

Chapter 35: Plant vascular tissue, section 2 pages 816-817

Content review 2

Chapter 36: Plant osmoregulation, sections 1 (on water potential) and 3 (with less emphasis on evidence for the cohesion tension theory)

Content review 1-3; Conceptual review 1; Discussion 2

Inter-cell signaling

Chapter 45: Nerves, sections 1 (ignoring Nernst and Goldman equations), 2 (focusing on voltage gated channels and action potential propagation), and 3

Content review 1 & 4; Conceptual review 2-4

Chapter 47: Animal hormones, section 1 (excluding human endocrine system overview)
Content review 2; Conceptual review 1, 2, 4, 5

Chapter 43: Diabetes discussion, section 4
Conceptual review 6

Chapter 39: Plant hormones, sections 1, 2, and 3 (other sections may be useful for lab)
Content review 1, 4

Chapter 38: Action potentials in plants, section 3
Content review 6; Conceptual review 6

Sensory systems

Chapter 46: Animal sensory systems, sections 1, 3, and 4
Content review 4; Conceptual review 1

Chapter 38: Plant sensory systems, sections 1 and 2
Content review 1; Conceptual review 3-5; Discussion 3

Growth and reproduction

Chapter 48: Animal reproduction, sections 1 and 2
Content review 1

Chapter 40: Plant reproduction, section 1 (sections 2-4 will help with lab)
Conceptual review 1

Chapter 35: Plant growth, section 3 (this will also help with lab)

Support and movement

(check with me to see if we'll make it this far in the course)

Chapter 46: Animal movement, section 5
Content review 5; Discussion 3

Chapter 35: Plant growth, section 3 (focusing on secondary growth)