

Advanced Biology - Textbook: Campbell & Reece, Biology, 8th Ed., Pearson/Prentice Hall

Levels: I - introduced; P - practiced; M - mastered

Teaching Notes

	CONCEPTS LEARNED	LEVEL	Chapter	Labs/Activities	STATE GOALS
I. Molecules & Cells	Chemistry of Life	P,M			12.A.4B
	a. Water		2,3		
	b. Organic molecules in organisms		4,5		
	c. Free energy changes				
	d. Enzymes				
	Cells	P,M			
	a. Prokaryotic and eukaryotic cells		6		
	b. Membranes		7		
	c. Subcellular organization				
	d. Cell cycle and its regulation		12		
	Cellular Energetics	P,M			
	a. Coupled reactions				
	b. Fermentation and cellular respiration		9		
	c. Photosynthesis		10		
II. Heredity & Evolution	Heredity	P,M			12.A.4A
	a. Meiosis and gametogenesis		13		12.A.5B
	b. Eukaryotic chromosomes		15		
	c. Inheritance patterns		14		
	Molecular Genetics	I,P,M			13.A.4C
	a. RNA and DNA structure and function		16,17		13.B.5B
	b. Gene regulation		19		12.B.5B
	c. Mutation				
	d. Viral structure and replication		18		
	e. Nucleic acid technology and applications		20		

Evolutionary Biology	P,M		12.A.4C
a. Early evolution of life		22,23,24	12.B.5B
b. Evidence for evolution			13.A.4C
c. Mechanisms of evolution			13.A.5B

III: Organisms and Populations

Diversity of organisms	P,M	25-34	12.A.4C
a. Evolutionary patterns			13.A.5B
b. Survey of the diversity of life			
c. Phylogenetic classification			
d. Evolutionary relationships			

Structure and Function of Plants and Animals	P,M	35-49	12.A.4B
a. Reproduction, growth and development			12.A.5A
b. Structural, physiological, and behavioral adaptations			
c. Response to the environment			

Ecology		50-55	12.B.4A
a. Population dynamics	I,P,M		12.B.4B
b. Communities and ecosystems			12.B.5A
c. Global issues			