

Table of Contents

Preface	v
Acknowledgments	vi
High School POGIL Initiative.	vii–viii
Biochemistry	
Biochemistry Basics	1
Free Energy	11
Protein Structure	21
Membrane Structure.	33
Cells and Cellular Processes	
Membrane Function.	43
Enzymes and Cellular Regulation.	51
ATP—The Free Energy Carrier	59
Cellular Respiration—An Overview	67
Glycolysis and the Krebs Cycle.	77
Oxidative Phosphorylation.	87
Photosynthesis	95
Cellular Communication	109
Signal Transduction Pathways.	117
Genetics	
Gene Expression—Transcription	125
Gene Expression—Translation	133
Genetic Mutations	141
Control of Gene Expression in Prokaryotes	151
Cell Cycle Regulation.	161
The Statistics of Inheritance	169
Chi-Square	179

*Page numbers correspond to the Teacher's Edition.

Evolution

Selection and Speciation	189
Phylogenetic Trees	201
The Hardy-Weinberg Equation	211
Mass Extinctions	221

Ecology

Global Climate Change	229
Eutrophication	237

Body Systems

Feedback Mechanisms	245
Control of Blood Sugar Levels	253
Neuron Structure	261
Neuron Function	269
Plant Hormones	277
Immunity	287