



**High School Biology Learning Pathway  
Scope and Sequence — First Semester**

The High School Biology Pathway is designed to introduce students to fundamental biological concepts through engaging, hands-on, differentiated instruction. In the first semester, learners experience an introduction to biology, explore ecology, gain an understanding of cells and organs, and investigate photosynthesis and cellular respiration. Through this Pathway, students explore living organisms and their interactions with the environment.

Unit: Introduction to Biology		
Instructional Weeks	Topics	Concepts
Weeks 1-2	Studying Life	What Is Science? The Scientific Method Lab Safety Characteristics of Life
	Chemistry of Life	Vital Chemistry in Life Science
Unit: Ecology		
Instructional Weeks	Topics	Concepts
Weeks 3-9	Energy Flow	Why Do We Eat? Producers vs. Consumers Food Chains and Food Webs Ecosystems
	Biomes and Natural Cycles	Climate Types of Biomes
	Human and Natural Impacts on the Biosphere	Populations, Cycles and Ecosystems Mass Extinctions and Large Weather Events Ecological Succession
Unit: Structure of Life		
Instructional Weeks	Topics	Concepts
Weeks 10-14	Cells	What Is a Cell? Model of Plant and Animal Cells Cell Structures and Functions Other Types of Cells Levels of Organization
	Organ Systems	Circulatory System Respiratory System Muscular System Skeletal System Digestive System Nervous System Immune System



Unit: Photosynthesis and Cellular Respiration		
Instructional Weeks	Topics	Concepts
Weeks 15-16	Photosynthesis	How Plants Make Food Reactions of Photosynthesis
	Cellular Respiration	Calories and Energy Cellular Respiration