

# Biology Pacing Guide

**Teachers of Biology must become familiar with and implement the NYS *Process Strands*:** The process strands (problem solving, relationships, processes, mechanisms, models and applications of biological concepts). These process strands help students in attaining science literacy, generate explanations, exhibit creative problem solving, and make informed decisions on the living environment and scientific inquiry.

Evolution is the 5th of 7 units within the Biology course. Key Idea 3: Individual organisms and species change over time.

4 Weeks	Content Bands & Student Expectations	Performance Indicators – Major Understandings	Essential question(s), Textbook connection, Suggested Labs/Activities	Vocabulary
<b>Unit 5 Evolution</b>	<p><b>Scientific Observation provides insights into evolution.</b> The students will be able to describe fossil evidence, differences in species and anatomical evidence for evolution.</p>	<p><b>P.I. 3.1</b> 1:1.1a 1:1.1b 4:3.1h 4:3.1e</p>	<p><b>Essential Question:</b> How do organisms and species change over time?</p> <p><b>Textbook Connection:</b> Chapters: 10.2 Darwin's observations 10.4 Evidence of common ancestry</p>	<p>Evolution Species Fossil Variation Adaptation Artificial selection Heritability Natural selection population Best adapted Competition Potential Variability Finite Consequence Interactions Genetic Offspring Mutation Recombination of genes Ensuing Selection Advantage More likely Proportion Advantageous Likelihood Reproductive cells Exhibited Reproductive success Increasingly complex Necessitate Extinction Adaptive characteristics Insufficient Common ancestor Evolutionary Change</p>
	<p><b>Theory of Natural Selection.</b> The students will be able to compare artificial to natural selection. Summarize the four principles of natural selection.</p>	<p>4:3.1f 4:3.1g</p>	<p><b>Essential Question:</b> How does the mechanism of natural selection explain how evolution occurred?</p> <p><b>Textbook Connection:</b> Chapter 10.3 Using the vocabulary of the NYS Standard 4:3.1f</p>	
	<p><b>Genetic evidence supports evolution.</b> The students will be able to describe the significance of genetic variation within a population and identify its sources.</p>	<p>4:3.1a 4:3.1b 4:3.1c 4:3.1d</p>	<p><b>Essential Question:</b> What are sources of genetic variation in species?</p> <p><b>Textbook Connection:</b> Chapter 11.1</p>	
	<p><b>New species can arise through isolation.</b> The students will be able to explain the types of isolation.</p>	<p>4:3.1i</p>	<p><b>Essential Question:</b> How do new species arise? What is meant by reproductive, behavioral, geographic and temporal isolation?</p> <p><b>Textbook Connection:</b> Chapter 11.5</p>	