

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.

Introduction to the course includes the Cell which is the foundation of the Study of all living things. Key Idea 1: living things are both similar and different from each other from nonliving things.

Continued	Content Bands & Student Expectations	Performance Indicators – Major Understandings	Essential question(s), Textbook connection, Suggested Labs/Activities	Vocabulary
<p style="text-align: center;"><b>Unit 1</b> <b>Introduction To Biology</b></p>	<p><b>Cells and energy</b></p>			
	<p><b>Cellular respiration</b> Students will be able to recognize the importance of cellular respiration</p>	<p>4:1.2.h, 4:5.1.d,e</p>	<p><b>Essential Question:</b> How do organisms recycle energy through out the environment?</p> <p><b>Textbook Connection:</b> Chapter 4.1,4.2,4.5</p>	<p>Cellular Respiration ATP Organic Glucose</p>
	<p><b>Photosynthesis</b> Students will be able to describe the basic process of photosynthesis.</p>	<p>4:5.1.a,b,d</p>	<p><b>Suggested Labs/ Activities:</b> Virtual Lab: gas exchange and elodea, virtual lab: plant transpiration</p>	<p>Stomata Guard Cells Chlorophyll Photosynthesis</p>
	<p><b>Cell division</b></p> <p><b>Mitosis:</b> Students will describe and illustrate the process of mitosis.</p> <p><b>Multi-cellular Life:</b> Students will be able to diagram the levels of organization in multi-cellular organisms.</p>	<p>4:1.2.a,c 4:2.1.d</p>	<p><b>Essential Question:</b> How and why do cells undergo mitosis?</p> <p><b>Textbook Connection:</b> Chapter 5.1, 5.2, 5.4</p> <p><b>Suggested Labs/ Activities:</b> Mitosis in onion root cells Mitosis flip book</p>	<p>Mitosis Cytokinesis Asexual reproduction Organ Tissue Organ system Differentiation Organism</p>

**Enduring Understanding:** Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science as it pertains to Biology.