



**Living Environment Curriculum Map**

MONTH	CONTENT	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LAB THEMES	SKILLS	ASSESSMENTS
<h1 style="writing-mode: vertical-rl; transform: rotate(180deg);">October</h1>	<p>Cell Structure and Function</p> <ul style="list-style-type: none"> <li>• Cell theory</li> <li>• Prokaryotes/eukaryotes</li> <li>• Cell organelles</li> <li>• Mechanisms for movement across cell membrane</li> <li>• Structure of the cell membrane</li> <li>• Solutions ( iso, hypo, hyper)</li> <li>• Tools/techniques for cell study</li> <li>• Levels of cellular organization</li> </ul> <p>Photosynthesis/Cellular Respiration</p> <ul style="list-style-type: none"> <li>• Autotrophs / Heterotrophs</li> <li>• Photosynthesis equation</li> <li>• Structure of the chloroplast (DNA)</li> <li>• Light and photosynthetic pigments</li> </ul> <p>Cell Growth and Divisions</p> <ul style="list-style-type: none"> <li>• Stages of mitosis</li> <li>• Cell cycle regulators</li> <li>• Cancer</li> </ul>	<p>4.1.2a, 4.1.2e-I, 4.1.3a</p> <p>4.5.1a-e, 4.6.1a</p> <p>4.2.1 a-g, 4.2.1 I, 4.3.1 d, 4.4.1 b, 4.4.1 d, 4.5.2 i, 4.5.2 j</p>	<p>Cell Microscopy</p> <p>Osmosis Diffusion* plant</p> <p>Photosynthesis/Respiration</p> <p>Mitosis</p> <p>*required state lab</p>	<p>Distinguish difference between plant and animal cells, cell parts</p> <p>Test with chemical Indicators for starch/glucose</p> <p>Gather data and form conclusions</p> <p>Identify different mitotic phases</p>	<p>Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance.</p> <p>Evaluation of lab write-ups.</p>

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<h1>November</h1>	<p>Intro to Genetics</p> <ul style="list-style-type: none"> <li>• Classical genetics</li> <li>• Gregor Mendel</li> <li>• Probability/Punnett square</li> <li>• Independent assortment</li> <li>• Incomplete dominance</li> <li>• Codominance</li> <li>• Multiple alleles</li> <li>• Stages of meiosis</li> <li>• Gamete formation</li> </ul>	<p>4.2.ag, 4.2.1i, 4.3.1d, 4.4.1b, 4.4.1d, 4.5.2i, 4.5.2j</p> <p>4.2.1e, 4.3.1c, 4.4.1c</p>	<p>Mitosis</p> <p>Karyotype</p> <p>Investigate inherited traits</p> <p>Probabilities</p>	<p>Interpret Karyotypes</p> <p>Compare and Contrast DNA Fingerprints</p> <p>Analyze genetic inheritance and calculate probability of inheritance</p>	<p>Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance.</p> <p>Evaluation of lab write-ups.</p>

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<h1 style="writing-mode: vertical-rl; transform: rotate(180deg);">December</h1>	<p>DNA / RNA</p> <ul style="list-style-type: none"> <li>• Search for inheritable material</li> <li>• Griffith et.al.</li> <li>• Structure of DNA</li> <li>• Structure of RNA</li> <li>• DNA replication eukaryotes &amp; prokaryotes</li> <li>• Protein Synthesis</li> <li>• Gene/chromosome mutations</li> </ul> <p>Genetic Engineering</p> <ul style="list-style-type: none"> <li>• Selective breeding</li> <li>• Increasing biodiversity</li> <li>• Techniques used to study &amp; manipulate DNA</li> <li>• Recombinant DNA/genetic engineering</li> <li>• Application of genetic engineering</li> </ul> <p>The Human Genome</p> <ul style="list-style-type: none"> <li>• Human genome project</li> <li>• Human chromosomes</li> <li>• Karyotype</li> <li>• Pedigree</li> <li>• Non-disjunction</li> <li>• Sex linked traits/disorders</li> <li>• Autosomal traits / disorders</li> <li>• Gene Therapy</li> <li>• DNA finger printing</li> <li>• Ethics</li> </ul>	<p>4.1.2i 4.2.1f-I 4.2.2c, 4.3.1d, 4.5.1c 4.5.1g</p> <p>4.2.2a-e, 4.3.1b, 4.3.1d</p> <p>4.2.1e, 4.2.1i , 4.2.1j, 4.2.2e, 4.5.2h</p>	<p>DNA / RNA Replication Transcription Translation</p> <p>Biodiversity*</p> <p>Genetic Engineering</p> <p>Human Genetics</p> <p>*required state lab</p>	<p>Transcribe/translate DNA to a protein</p> <p>Compare/contrast plant specimens Compare/contrast DNA and proteins Analyze and evaluate experimental data</p> <p>Research current information</p> <p>Analyze pedigrees and human genetic disorders</p>	<p>Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance.</p> <p>Evaluation of lab write-ups.</p>

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<h1 style="writing-mode: vertical-rl; transform: rotate(180deg);">January</h1>	<p>Darwin’s Theory of Evolution</p> <ul style="list-style-type: none"> <li>• Natural Selection</li> <li>• Lamarck vs. Darwin</li> <li>• Evidence of evolution</li> <li>• Variations in populations</li> </ul> <p>Evolution of Populations</p> <ul style="list-style-type: none"> <li>• Types of natural selection</li> <li>• Variations in populations</li> <li>• Hardy Weinburg Principle</li> <li>• Speciation</li> </ul> <p>Classification</p> <ul style="list-style-type: none"> <li>• Assigning scientific names</li> <li>• Linneaus’ system</li> <li>• 3 domain system</li> <li>• Evolutionary trends</li> <li>• 9 common animal Phyla : Porifera , Cnidaria , Platyhelminthes , Nematodes, Annelids, Molluska, Arthropoda , Echinoderms, Chordates</li> <li>• Characteristics of mammals</li> <li>• Characteristics of primates</li> </ul>	<p>1.1.1a-b, 4.2.2a, 4.3.1a, 4.3.1e-i</p> <p>1.1.1a-b, 4.2.1c-e, 4.3.1c 4.3.1 e-k</p> <p>1.1.1b, 4.3.1e, 4.3.1k</p>	<p>Evolution * (Beaks of Finches)*</p> <p>*required state lab</p> <p>Classifica-tion</p>	<p>Compare/contrast characteristics of beaks</p> <p>Understand competition between species</p> <p>Assess effects of environmental changes on species</p> <p>Use a Dichotomous Key</p> <p>Classify specimens</p>	<p>Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance.</p> <p>Evaluation of lab write-ups.</p>







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<p><b>May</b></p>	<p>Ecosystems/Community</p> <ul style="list-style-type: none"> <li>• Greenhouse effect</li> <li>• Effect of latitude/heat transfer</li> <li>• Biotic/abiotic factors</li> <li>• Niche vs. habitat</li> <li>• Community interactions</li> <li>• Ecological succession</li> <li>• Land biomes</li> <li>• Fresh water ecosystems</li> <li>• Marine ecosystem</li> </ul> <p>Populations</p> <ul style="list-style-type: none"> <li>• Characteristics of a population</li> <li>• Population growth</li> <li>• Limiting Factors</li> <li>• Human population growth</li> </ul> <p>Humans in Biosphere</p> <ul style="list-style-type: none"> <li>• Human activities</li> <li>• Renewable and nonrenewable resources •</li> </ul> <p>Biodiversity</p> <ul style="list-style-type: none"> <li>• Threats to biodiversity</li> <li>• Conserving biodiversity</li> <li>• Ozone depletion</li> <li>• Global warming</li> <li>• Eutrophication of the lakes</li> <li>• Acid rain</li> </ul>	<p>4.1.1a-c, 4.6.1a, 4.6.1e, 4.6.1g, 4.6.3b</p> <p>4.6.1d-f</p> <p>4.7.1a, 4.7.1c, 4.7.2a -c, 4.7.3b</p>	<p>Predator/Prey relationships</p> <p>Population growth</p> <p>Limiting factors</p>	<p>Understand relationships between organisms</p> <p>Graphing</p> <p>Evaluate how humans affect the ecosystem</p>	<p>Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance.</p> <p>Evaluation of lab write-ups.</p>

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<b>May (cont.)</b>					

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<b>June</b>	REGENTS REVIEW	ALL	ALL	ALL	<p>Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance.</p> <p>Evaluation of lab write-ups.</p>

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