

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"> • Cell theory • Prokaryotes/eukaryotes • Cell organelles • Mechanisms for movement across cell membrane • Structure of the cell membrane • Solutions (iso, hypo, hyper) • Tools/techniques for cell study • Levels of cellular organization <p>Photosynthesis/Cellular Respiration</p> <ul style="list-style-type: none"> • Autotrophs / Heterotrophs • Photosynthesis equation • Structure of the chloroplast (DNA) • Light and photosynthetic pigments <p>Cell Growth and Divisions</p> <ul style="list-style-type: none"> • Stages of mitosis • Cell cycle regulators • Cancer 	<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*</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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November	Intro to Genetics <ul style="list-style-type: none"> • Classical genetics • Gregor Mendel • Probability/Punnett square • Independent assortment • Incomplete dominance • Codominance • Multiple alleles • Stages of meiosis • Gamete formation 	4.2.ag, 4.2.1i, 4.3.1d, 4.4.1b, 4.4.1d, 4.5.2i, 4.5.2j 4.2.1e, 4.3.1c, 4.4.1c	Mitosis Karyotype Investigate inherited traits Probabilities	Interpret Karyotypes Compare and Contrast DNA Fingerprints Analyze genetic inheritance and calculate probability of inheritance	Written assessment which encompasses problem solving, comprehension, synthesis and evaluation of performance. Evaluation of lab write-ups.

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December	<p>DNA / RNA</p> <ul style="list-style-type: none"> • Search for inheritable material • Griffith et.al. • Structure of DNA • Structure of RNA • DNA replication eukaryotes & prokaryotes • Protein Synthesis • Gene/chromosome mutations <p>Genetic Engineering</p> <ul style="list-style-type: none"> • Selective breeding • Increasing biodiversity • Techniques used to study & manipulate DNA • Recombinant DNA/genetic engineering • Application of genetic engineering <p>The Human Genome</p> <ul style="list-style-type: none"> • Human genome project • Human chromosomes • Karyotype • Pedigree • Non-disjunction • Sex linked traits/disorders • Autosomal traits / disorders • Gene Therapy • DNA finger printing • Ethics 	<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>January</h1>	<p>Darwin's Theory of Evolution</p> <ul style="list-style-type: none"> • Natural Selection • Lamarck vs. Darwin • Evidence of evolution • Variations in populations <p>Evolution of Populations</p> <ul style="list-style-type: none"> • Types of natural selection • Variations in populations • Hardy Weinburg Principle • Speciation <p>Classification</p> <ul style="list-style-type: none"> • Assigning scientific names • Linneaus' system • 3 domain system • Evolutionary trends • 9 common animal Phyla : Porifera , Cnidaria , Platyhelminthes , Nematodes, Annelids, Molluska, Arthropoda , Echinoderms, Chordates • Characteristics of mammals • Characteristics of primates 	<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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May	<p>Ecosystems/Community</p> <ul style="list-style-type: none"> • Greenhouse effect • Effect of latitude/heat transfer • Biotic/abiotic factors • Niche vs. habitat • Community interactions • Ecological succession • Land biomes • Fresh water ecosystems • Marine ecosystem <p>Populations</p> <ul style="list-style-type: none"> • Characteristics of a population • Population growth • Limiting Factors • Human population growth <p>Humans in Biosphere</p> <ul style="list-style-type: none"> • Human activities • Renewable and nonrenewable resources • Biodiversity • Threats to biodiversity • Conserving biodiversity • Ozone depletion • Global warming • Eutrophication of the lakes • Acid rain 	<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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May (cont.)					

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June	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>