

## 2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
August 2010	<ul style="list-style-type: none"> <li>• Nature of Science/Problem solving, supporting your ideas</li> <li>• Science Safety</li> </ul>		<p>Putnam City Schools Science Safety Guidelines</p> <p>SI Activities (metric conversion, basic practice)(.pc)</p> <p>Experimental Design (Plop Plop, Fizz, Fizz)(.pc)</p> <p>Cube Activity (.pc)</p>	<p>1-12</p> <p>16-19</p> <p>20-23</p>

## 2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
September 2010	<ul style="list-style-type: none"> <li>• Chemistry (biomolecular - 3 days)</li> <li>Sections 1.5 (abbreviated)</li> <li>1.6</li> <li>1.7</li> <li>1.8</li> <li>1.9</li> <li>1.10</li> <li>• Exchange of materials within cells</li> <li>3.1 - 3.4</li> </ul>	C1.1, P3.5 <ul style="list-style-type: none"> <li>• Cell Membrane</li> <li>• osmosis</li> <li>• diffusion</li> <li>• ration of surface area: volume</li> <li>• hypotonic</li> <li>• hypertonic</li> <li>• isotonic</li> </ul>	Labs: PD: Concept Map (optional) 1A (required) (pH) (.pc modification) - Mary part 3  1B (optional) indicator lab (use PCH Re-write)  3A (required)(.pc) Cells and Movement of Materials  3B - (required) Diffusion and cell size - use Gelatin or potato emphasis on surface area/volume - Amanda  microscope/solution types (PC, 6A, 3A part c) (.pc revision pending)	20-23  16-19  20-23  20-23  16-19

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
October 2010	<ul style="list-style-type: none"> <li>•Types of cells/ cell parts 6.1-6.5, pg 180</li> <li>• Photosynthesis 4.1-4.3, 4.4, 4.5</li> <li>• Cellular respiration 5.2, 5.2, 5.4 (input &amp; output)</li> </ul>	<p>C1.1, C 1.2, C2.1, C 5.1 C 1.1</p> <ul style="list-style-type: none"> <li>• nucleus</li> <li>• cell membrane</li> <li>• cell wall</li> <li>• cytoplasm</li> <li>• ribosomes</li> <li>• mitochondria</li> <li>• chloroplasts</li> <li>• structure and function of listed organelles</li> <li>• classify cell as plant, animal, or bacteria</li> <li>• eukaryote</li> <li>• prokaryote</li> </ul> <p>C1.2</p> <ul style="list-style-type: none"> <li>• cells - tissues - organs - systems - organism</li> <li>• cell is basic unit of life</li> </ul> <p>C5.1</p> <ul style="list-style-type: none"> <li>• Photosynthesis &amp; Cell Respiration</li> <li>• factors that affect process (temp., wavelength, gas concentration) p.112</li> </ul>	<p>4A, (required)- or leaf disk lab from KABT (.pc)</p> <p>Respiration lab (labquests pH, Temp) Amanda, Bethany, Bob</p>	<p>20-23</p> <p>24-27</p> <p>Fall Break Oct 21-22</p> <p>Fall Benchmark Oct 25-29</p>
	<p>DNA Structure and Replication 1.11, 1.12, 8.3-8.4</p>		<p>Bio-Rad Analysis of pre-cut DNA demistifying electrophoresis DNA Extraction w fruits, vegetable, and animal tissue- Amanda</p>	<p>16-19</p>

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
November 2010	<p>•Transcription and Translation 9.1-9.3, 9.5(abbreviated), 9.7</p> <p>Mitosis/ Meiosis 8.1-8.2, 8.6. 8.9, 12.2, 12.3</p> <p>• Genetics (Punnet Square) 13.1-13.11</p> <p>• Genetics (pedigree) other sources</p>	<p>C2.1</p> <ul style="list-style-type: none"> <li>• DNA structure, base pairing, cell cycle</li> <li>• replication, transcription</li> <li>• mutations in DNA change protein formation</li> <li>• proteins express DNA traits</li> </ul> <p>C 1.1, C1.2, C2.1 C2.2, 3.1, 3.2, C5.2</p> <p>Content Limits C2.2</p> <ul style="list-style-type: none"> <li>• meiosis - genetic continuity (NOT crossing over, synapsis, tetrads, nondisjunction) (NOT events of each stage or correct sequence)</li> </ul> <ul style="list-style-type: none"> <li>• interpret, analyze, evaluate data &amp; make predictions from a given genetic cross</li> <li>• results of meiosis</li> <li>• pedigrees                             <ul style="list-style-type: none"> <li>- single trait cross</li> <li>- sex-linked</li> <li>- incomplete dominance</li> </ul> </li> </ul> <p>(NOT multiple alleles, polygenic traits)</p>	<p>Online mitosis/meiosis Activities: 8A, 9A, 9B</p> <p>Labs: 13A (required) Probability (.pc) or bunny lab - Amy</p>	<p>20-23 20-23</p>

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
December 2010	<ul style="list-style-type: none"> <li>• Genetics (Punnet Square) 13.1-13.11</li> <li>• Genetics (pedigree) other sources</li> </ul>	<ul style="list-style-type: none"> <li>• interpret, analyze, evaluate data &amp; make predictions from a given genetic cross</li> <li>• results of meiosis</li> <li>• pedigrees                             <ul style="list-style-type: none"> <li>- single trait cross</li> <li>- sex-linked</li> <li>- incomplete dominance (NOT multiple alleles, polygenic traits)</li> </ul> </li> </ul>	<p>Pedigrees</p> <p>(Amanda, Mary, Amy)</p> <p>Dragon Genetics</p> <p>flipnob family pedigree</p>	

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
January 2011	<ul style="list-style-type: none"> <li>• Diversity 18.1-18.4, 18.6, 19.5</li> <li>• Change in Species</li> <li>• Evolution P6, 16.1, 16.4-16.6</li> </ul>	<p>C3.1</p> <ul style="list-style-type: none"> <li>• relatedness of organism regarding internal structures, chemical processes, evidence of ancestry</li> <li>• differentiate between appropriate and inappropriate information for determining species relatedness</li> </ul> <p>-common ancestry -homologous -variation in populations -analagous -cladistics -natural selection -evidence (fossils, anatomical, embryological , biochemical, geographical, ecological) -phylogenetic trees -dichotomous key</p> <p>C3.2</p> <ul style="list-style-type: none"> <li>• variations within and between populations</li> <li>• natural selection</li> </ul>	<p>Sickle Cells and Evolution (.pc)</p> <p>16A (optional) 18A (required) 22A (required)</p>	<p>end of 1st Semester</p> <p>Common Assessment #2 Week of Jan 10 (through Genetics, pedigrees)</p>

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
February 2011	<ul style="list-style-type: none"> <li>•Ecosystem Structure matter, energy, ecosystems 2.1-2.4 energy flow, food webs 24.1-24.6</li> </ul>	<ul style="list-style-type: none"> <li>•biological adaptation - enhances or deter survival and reproductive success in a particular environment</li> <li>• short term adjustments of individual organisms during lifetime are not passed to offspring</li> <li>-cladistics</li> <li>-divergence</li> <li>-convergence</li> <li>-selection</li> <li>-disruption</li> </ul> <p>C5.2</p> <ul style="list-style-type: none"> <li>• energy at levels of biosphere - nonliving and trophic levels</li> <li>• herbivore</li> <li>• carnivore</li> <li>• omnivore</li> <li>• decomposer</li> <li>• 10% rule</li> <li>• biomass</li> <li>• # of organisms</li> <li>• food webs</li> <li>• photosynthesis and respiration in conservation</li> <li>• cycling of matter and energy</li> <li>• carbon, nitrogen, and water cycles</li> </ul>	<p>lesson study Snail and Elodea or 24B (required)</p>	<p>Time to start long term projects:</p> <p>Fast plants and cabbage flies (a project for Bob, Steve, Amanda, and Amy)</p> <p>Bottle Biology (Amanda Amy)</p> <p>Fast plant genetics</p>

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
March		<p>C4.1</p> <ul style="list-style-type: none"> <li>• biogeochemical processes</li> <li>• function of decomposers</li> <li>• cycling of nutrients</li> <li>• movement of matter between living and non-living components</li> <li>• interrelationships between biotic and abiotic</li> <li>• recycling of nutrients</li> </ul> <p>C4.2</p> <ul style="list-style-type: none"> <li>• niche</li> <li>• symbiosis</li> <li>• parasitism</li> <li>• competition</li> <li>• predator-prey</li> <li>• commensalism</li> <li>• mutualism</li> </ul> <p>C4.3</p> <ul style="list-style-type: none"> <li>• predation</li> <li>• food supply</li> <li>• habitat</li> <li>• biotic potential</li> <li>• carrying capacity</li> <li>• natality</li> <li>• mortality</li> <li>• immigration</li> <li>• emigration</li> <li>• colonization</li> <li>• population density</li> <li>• biomass</li> <li>• j and s - shaped curves</li> </ul>	<p>BSCS Biology: A Molecular Approach Labs: 22B (required) Behavior of an invertebrate (.pc) 11B (required)</p>	

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
April	<ul style="list-style-type: none"> <li>• Behavior</li> </ul> 11.8, 22.1-22.1, 4.3. 6.2 other sources	C6.1 <ul style="list-style-type: none"> <li>• physiological responses to stimuli</li> <li>• interpret given models of homeostasis, geotropism, chemotaxis, phototaxis, feedback loops, and role of sensory cells</li> <li>• relationship between stimulus and response</li> </ul> C6.2 <ul style="list-style-type: none"> <li>• complex behavioral adaptations displayed by species to insure reproductive success</li> <li>-migration</li> <li>-hibernation</li> <li>-schooling</li> <li>-territoriality</li> <li>-mating rituals</li> <li>-innate/ learned</li> </ul> and how they affect reproductive success and species survival		Final Benchmark

C6.1, C6.2  
All Biology PASS

2010-11 Biology I

Month/Year	Science Content Topic	PASS Skills	Activities/ Labs/ Assessments	College Readiness Standard/ Score Range
May				