

Biology Pacing 2014-2015

Week #	Topic	Chapter	Lab	Standards	Comments
1	INB/Scientific Thinking		<b>Biology Inquiries</b> p. 33 Crossed Knives p. 37 Who's In the Box? p. 25-8 She Turned Me into a Newton (I Got Better)	<b>ETS1-2:</b> Design a solution to a complex real-world problem by breaking it down.	
2	INB/Scientific Thinking		<b>Biology Inquiries</b> p. 29-32 Storytelling Graphing p. 18-24 The Inquiry Cubes p.50-3 Scientific Inquiry Assessment	<b>ETS1-2:</b> Design a solution to a complex real-world problem by breaking it down.	
3	Cycles			<b>LS2-5:</b> Carbon Cycle (photosynthesis and cellular respiration) Model <b>LS1-5:</b> Photosynthesis (matter inputs/outputs; nrg transfer/transformation) <b>Model</b>	
4	Cycles		<b>Argument-Driven Inquiry</b> p.86 Lab 6 Cellular Respiration: Type of Food and Rate in Yeast	<b>LS1-7:</b> Cellular Respiration (bonds broken/formed; net nrg transfer) Model <b>LS2-3:</b> Role of (an)aerobic respiration in different environments (cycling of matter, nrg flow) <b>Evidence-based Expl.</b>	
5	Earth's Formation (Historical)		<b>Biology Inquiries</b> p.60-4 What is Life? Part 1: Glue Goblins p. 65-9 What is Life? Part 2: Investigations	<b>LS1-6:</b> Biological Molecules (C+H+O=aa's and large C-based molec's) Evidence <b>ESS1-6:</b> Earth's formation and early history (ancient Earth materials, meteorites, other planetary surfaces) <b>Sci Reasoning/Evidence</b>	
6	Earth's Formation (Historical)			<b>ESS1-6:</b> Earth's formation and early history (ancient Earth materials, meteorites, other planetary surfaces) <b>Sci Reasoning/Evidence</b>	
7	Earth's Formation (Historical)			<b>ESS1-5:</b> Plate Tectonics (continental and oceanic crust movements; ages of crustal rocks) <b>Eval Evidence</b>	

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8	Earth's Formation (Historical)		Class Closed System (Make Predictions about Sustainability)	ESS2-7: Coevolution of Earth's systems and life on Earth (geosciences->life evol->Earth's surface) ex: photosynth->O2 atm-> increase weathering->animal life evol...) <b>Evidence-based argument</b>	
9	Earth's Formation (Historical)			LS4-1: Evidence for common ancestry and biological evolution (similarities in DNA sequences; anatomical structures; embryological development-order of appearance) <b>Communicate Sci Info</b>	
10	Earth's Formation (Historical)		<b>Argument-Driven Inquiry</b> p.371 Lab 27. Whale Evolution: How Are Whales Related to Other Mammals?	LS4-1: Evidence for common ancestry and biological evolution (similarities in DNA sequences; anatomical structures; embryological development-order of appearance) <b>Communicate Sci Info</b>	
11	Adaptation			LS4-3: Increase organisms with advantageous heritable trait (shifts in numerical distribution of traits; NO allele freq calc's) <b>Apply stat's and probability</b>	
12	Adaptation		Beaks (Fork, Knife, Spoon) OR Black Forest, Red Grassland	LS4-4: Natural Selection ->pop. Adaptation (a)biotic factors -> change in gene freq over time (Ex: seasonal temp ranges, long-term climate change, acidity, light, geographic barriers, evol of other organisms) <b>Evidence-based argument</b>	
13	Adaptation			LS4-5: Change in environmental conditions ->: increase #individ's some species; new species; extinction of species (cause and effect, ex: deforestation, fishing, fertilizers, drought, flood) <b>Eval Evidence</b> LS3-3	

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14	Adaptation			LS4-5  LS3-3: Genetic and environmental factors -> variation and distribution of expressed traits in a pop (no Hardy-Weinberg) <b>Apply stat's and probability</b>	
15	Adaptation/Genetics?	<b>Biology Inquiries</b> p. 157-166 Dissecting Frog Evolution		LS4-2: Evolution occurs through: increasing #s in species; heritable genetic variation (mutation, sexual reproduction); competition (limit resources); increased #s of better adapted individuals Evidence LS2-8: Role of group behavior on indiv and spp's chance of survival and reproduction (grp vs indiv behav; <b>ID supporting evidence; develop logical/reasonable evidence-based arguments</b> )	
16	Genetics/Inheritance (DNA/Chromosomes)	<b>Argument-Driven Inquiry</b> Lab 18. DNA Structure: What Is the Structure of DNA?		LS3-1: Role of DNA and chromosomes in coding instruction for heritable characteristic traits <b>Ask questions to clarify relationships</b>	
17	Genetics/Inheritance (Variations)	<b>Argument-Driven Inquiry</b> Lab 20. Inheritance of Blood Type: Are All of Mr. Johnson's Children His Biological Offspring?		LS1-1: DNA Structure determines protein structure. Proteins-essential life functions or specialized cells <b>Explain with evidence</b>	Link to A&P (specialized cells-> organ systems)
18	Review				
19	Finals				
20	Genetics/Inheritance (DNA/Proteins)			LS1-1: DNA Structure determines protein structure. Proteins-essential life functions or specialized cells <b>Explain with evidence</b>	

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21	Genetics/Inheritance			LS3-2: Inheritable Genetic Variations (Errors in Replication) <b>Make and Defend Evidence-Based Claim</b>	
22	Genetics/Inheritance		<b>Argument-Driven Inquiry</b> Lab 17. Chromosomes and Karyotypes: How Do Two Physically Healthy Parents Produce a Child with Down Syndrome and a Second Child with Cri Du Chat Syndrome?	LS3-2: Inheritable Genetic Variations (Mutation and Meiosis-new genetic combo's) <b>Make and Defend Evidence-Based Claim</b>	
23	Biodiversity and Interactions			LS2-2: Biodiversity and populations factors (explanations of effects) <b>Mathematical Representations (find trends, compare graphs)</b>	
24	Biodiversity and Interactions		<b>Argument-Driven Inquiry</b> Lab 10. Predator-Prey Population Size Relationships: Which Factors Affect the Stability of a Predator-Prey Population Size Relationship? Raptor Hunt	LS2-6: Ecosystems (complex interactions -> stable conditions-consistent #s and types of organisms; changing conditions -> new ecosystem) <b>Eval claims, evidence, reasoning</b>	Computer-Based Lab
25	Biodiversity and Interactions		Raptor Hunt	LS2-1: Carrying capacity factors (explanation of impacts/effects) <b>Math/computational representations (quantitative analysis and comparison of relationships)</b>	Raptor Hunt
26	Natural Resources and Human Impact			ESS3-1: Influence of Human Activity on: <b>Natural resource availability</b> (fresh water, fertile soil, minerals and fossil fuels) <b>Evidence-based explanation</b>	
27	Review/Start Projects				
28	Benchmark 3				

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29	Natural Resources and Human Impact			<p>ESS3-1: Influence of Human Activity on: <b>Natural Hazards</b> (volcanic eruptions, earthquakes, tsunamis, mass wasting, soil erosion, hurricanes, floods, droughts) <b>Climate Changes</b> (change in sea level, regional temp and precipitation, types of crops and livestock) <b>Evidence-based explanation</b></p>	
30	Natural Resources and Human Impact			<p>ESS3-3: Management of natural resources, human pop sustainability, and biodiversity (relationships) <b>Create Computational Simulation</b></p>	Project
31	Natural Resources and Human Impact			<p>ESS3-4: Reduce impacts of human activities on natural systems (<b>Eval/refine "tech" solution</b>)</p> <p>LS2-7: Solution for reducing impacts of human activities on environment and biodiversity (ex: urbanization, building dams, dissemination invasive species) <b>Design, eval, refine</b></p> <p>LS4-6: Mitigate adverse impacts of human activity on biodiversity (threatened/ endangered species OR genetic variation for mult spp's) <b>Create/revise simulation to test a solution</b></p>	Project
32	Anatomy and Physiology			<p>LS1-2: How organ systems interact <b>Develop/use a model</b></p>	<p>Overview</p> <p>Introduce Project (Choose 2 systems to link)</p>
33	Anatomy and Physiology		<p><b>Argument-Driven Inquiry</b> Lab 4. Normal and Abnormal Cell Division: Which of These Patients Could Have Cancer?</p>	<p>LS1-2: How organ systems interact <b>Develop/use a model</b></p> <p>LS1-4: Cellular division (mitosis) and differentiation and complex organisms (production and maintenance) <b>Model</b></p>	<p>Overview</p>

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34	Anatomy and Physiology			<p>LS1-2: How organ systems interact <i>Develop/use a model</i></p> <p>LS1-3: Feedback mechanisms maintain homeostasis <i>Plan/conduct an investigation</i></p>	<p>Overview Project Example</p>
35	Anatomy and Physiology			<p>LS1-2: How organ systems interact <i>Develop/use a model</i></p> <p>LS1-3: Feedback mechanisms maintain homeostasis <i>Plan/conduct an investigation</i></p>	<p>Project</p>
36	Anatomy and Physiology			<p>LS1-2: How organ systems interact <i>Develop/use a model</i></p> <p>LS1-3: Feedback mechanisms maintain homeostasis <i>Plan/conduct an investigation</i></p>	<p>Project</p>
37	Portfolio				
38	Review/Portfolio				
39	Finals/Portfolio Panel				