Lab-Aids Correlation for

Michigan K-12 Standards: High School Biology

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This document is intended to show how the *Science and Global Issues: Biology, 3rd Edition Redesigned for the NGSS* materials align with the Michigan K-12 Standards: Science, November 2015.

ABOUT OUR PROGRAMS
Lab-Aids has based its home offices and operations in Ronkonkoma, NY, since 1963. We publish over 200 kits and core curriculum programs to support science teaching and learning, grades 6-12. All core curricula support an inquiry-driven pedagogy, with support for literacy skill development and with assessment programs that clearly show what students know and are able to do as a result of program use. All programs have extensive support for technology and feature comprehensive teacher support. For more information please visit www.lab-aids.com and navigate to the program of interest.

SEPUP
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ABOUT THE LAB-AIDS CITATION

Citations included in the correlation document are as follows:
Unit title: Activity Number(s)   *Evolution: 13, 14**
* indicates where Performance Expectation is assessed
Performance Expectation   HS-LS1-2   ** integrates traditional science content with engineering.   *** Allow for local, regional, or Michigan specific contexts or examples in teaching and assessment.

Performance Expectation	Science and Global Issues: Biology *Unit: Activity Number(s)*
Structure and Function	
HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.	*Cells: 6* *Genetics: 2, 7, 8, 9, 10*, 15*
HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	*Cells: 2, 3, 4, 5, 6*, 7*, 8*
HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	*Cells: 1, 2, 3, 4, 5, 7, 8, 9*
Matter and Energy in Organisms and Ecosystems	
HS-LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	*Cells: 11*, 12, 13, 15*
HS-LS1-6 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.	*Cells: 9, 10, 11, 13, 14, 15, 16**
HS-LS1-7 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.	*Cells: 9, 10, 14, 15*, 16*
HS-LS2-3 Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.	*Ecology: 6, 7, 8** *Cells: 10, 15**
HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. ***	*Ecology: 6, 7, 9, 10**
HS-LS2-5 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. ***	*Ecology: 11, 12**
Interdependent Relationships in Ecosystems	
HS-LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.	*Ecology: 1, 2, 3*, 4*
HS-LS2-2 Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.	*Ecology: 3, 4, 5**
HS-LS2-6 Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	*Ecology: 13, 14*, 15, 16*

Performance Expectation	Science and Global Issues: Biology *Unit: Activity Number(s)*
HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. ** ***	*Ecology: 13, 14, 15, 16, 17** *Cells: 1, 2, 3, 7, 13, 17* *Genetics: 16, 17* *Evolution: 10, 13, 14*, 15**
HS-LS2-8 Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.	*Evolution: 1, 3**
HS-LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity. ***	*Evolution: 12, 13, 14**
Inheritance and Variation of Traits	
HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	*Genetics: 3, 8**
HS-LS3-1 Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	*Genetics: 4, 5, 7, 10, 11*, 12**
HS-LS3-2 Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.	*Genetics: 1, 6, 11, 12, 13**
HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	*Genetics: 4, 5, 6*, 14**
Natural Selection and Evolution	
HS-LS4-1 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.	*Evolution: 6, 7, 8, 9, 10*
HS-LS4-2 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.	*Evolution: 1, 2, 3, 4, 5*, 6, 12*
HS-LS4-3 Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.	*Genetics: 14, 15, 16* *Evolution: 1, 2, 3, 4*, 5, 6*
HS-LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.	*Evolution: 1, 2, 3, 4, 5, 6*, 11, 12*
HS-LS4-5 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.	*Evolution: 6, 7, 8*, 9, 10*