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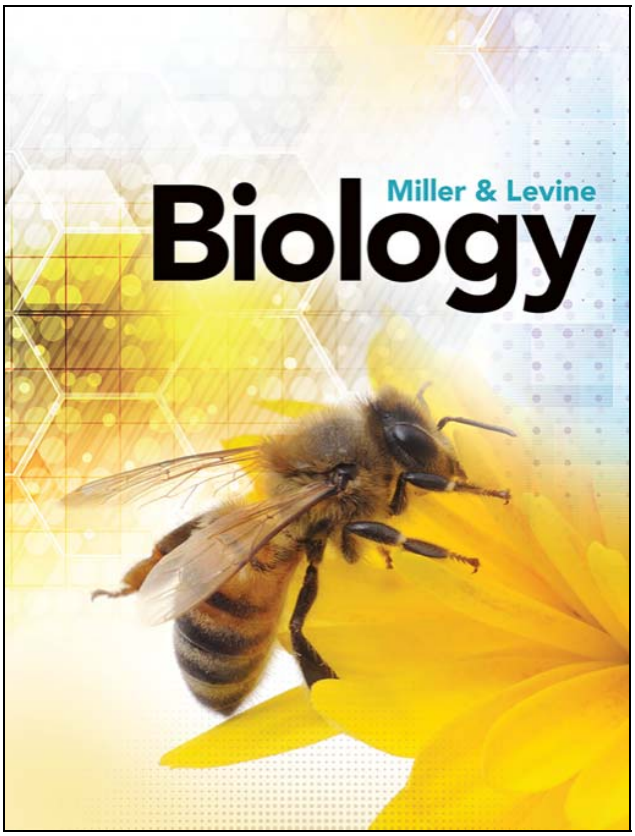

To the

Nebraska
College and Career Ready Standards
High School Life Science

Pearson

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To the
Nebraska College and Career Ready Standards for HS Life Science

Introduction

This document demonstrates how ***Miller & Levine Biology ©2019*** meets the Nebraska College and Career Ready Standards for High School Life Science. Correlation page references are to the Student and Teacher's Editions and cited at the page level.

Renowned Author Team Ken Miller and Joe Levine have created a comprehensive on-level program to inspire students to interact with trusted and up-to-date biology content. The authors' unique storytelling style engages students in biology, with a greater focus on written and visual analogies. This innovative and fresh new program was developed for modern biology classrooms with a focus on STEM integration and 21st century education.

Problem-Based Learning The Problem-Based Learning Strand introduced in each unit opener immerses students in an active learning environment with lab investigations, STEM projects, virtual activities, and authentic readings. When students each the end of the unit, they use their newly acquired scientific knowledge and data to design, test, and evaluate a solution to the presented problem.

Performance-Based Assessment Authentic assessments of STEM learning allow students to demonstrate mastery of the chapter concepts and new standards. All Performance-Based Assessments feature real-world problems and focus on science inquiry, engineering, and STEM practices.

Case Studies Students directly interact with science phenomena in every chapter as they learn about a real-world science problem. Throughout the lessons, students find case study connections in data analysis activities, labs, diagrams, illustrations, and interactivities.

Interactive Learning Students interact with digital art, videos, and animations through interactive prompts or questions, making ***Miller & Levine Biology*** relevant to their lives.

Reading and Study Support *Biology Foundations: Reading and Study Guide Workbook* includes lesson summaries, vocabulary help, and reading tools. Practice focuses on key concepts and science literacy to improve students' understanding of scientific text.

PearsonRealize.com PearsonRealize.com is your online destination for the complete Miller & Levine Biology digital curriculum. A single sign-on provides access to biology content, assessments, resources, management tools, and real-time student data. Realize directly syncs with providers such as Google® and OpenEd to provide a seamless digital experience.

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SC.HS.6 Structure and Function	
SC.HS.6.1 Gather, analyze, and communicate evidence of the relationship between structure and function in living things.	
SC.HS.6.1.A 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.	**SE/TE:** Organelles That Build Proteins, 250-251 Lesson 8.2 Review, 257 Write About Science, 278 Genetic Code, 445 Molecular Genetics, 450 Lesson 14.5 Review, 450
SC.HS.6.1.B Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	**SE/TE:** Levels of Organization, 268 Lesson 8.4 Review, 269
SC.HS.6.1.C Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	**SE/TE:** Passive Transport, 260-261 Exploration Lab, 261 Assessment , 277 Lesson 27.1 Review, 909
SC.HS.6.1.D Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.	**SE/TE:** Cell Division, 340 Quick Lab: Make a Model of Mitosis, 347 Figure 11-10, 349 Defining Differentiation, 356 Organize Information, 365 Assessment, 369-370
SC.HS.7 Interdependent Relationships in Ecosystems	
SC.HS.7.2 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	
SC.HS.7.2.A Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.	**SE/TE:** Exponential Growth, 148-149 Argument-Based Inquiry, 148 Logistical Growth, 150-151 Assessment , 170-171

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SC.HS.7.2.B Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.	**SE/TE:** Figure 5.9 , 154 Analyzing Data, 155 Lesson 5.2 Review, 157 Performance-Based Assessment, 166-167
SC.HS.7.2.C Evaluate the claims, evidence, and reasoning that the interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	**SE/TE:** Case Study: Can we make a working model of our living planet?, 76-77 Analyzing Data: Monarchs in Decline, 155 Lesson Review, 157 Habitat and Niche, 174-177 Lesson Review, 181 Climate Change Impacts, 221-221 Effects on Life, 650-651
SC.HS.7.2.D Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.	**SE/TE:** Modeling Lab - The Role of Group Behavior, 825 Animal Societies, 826 Lesson 24.4 Review, 827 Assessment, 835
SC.HS.7.2.E Design, evaluate, and refine a solution for increasing the positive impacts of human activities on the environment and biodiversity.	**SE/TE:** Case Study: How can a rising tide be stopped?, 201 Lesson Review, 205 Lesson Review, 217 Performance-Based Assessment, Design a Solution, 230-231 Chapter Assessment, 232-234 Performance-Based Assessment: Data from the Corn Field, 302-303
SC.HS.7.2.F Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.	**SE/TE:** Interactivity, 154 Interactivity, 156 Interactivity, 157 Interactivity, 159 Interactivity, 161 Case Study, 162 **TE Only:** Teach with Technology, 164

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SC.HS.8 Matter and Energy in Organisms and Ecosystems	
SC.HS.8.3 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems.	
SC.HS.8.3.A Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	**SE/TE:** Visual Analogy, 288 Animation, 293 Lesson 9.3 Review, 297
SC.HS.8.3.B Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other molecules to form the four basic macromolecules.	**SE/TE:** Macromolecules, 53-57 Assessment, 70 Nutrient Cycles, 126-127
SC.HS.8.3.C Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules are broken and bonds in new compounds are formed resulting in a net transfer of energy.	**SE/TE:** Stages of Cellular Respiration, 312 Overview of Cellular Respiration, 311-312 Interactivity, 312 Up Close - Interactivity, 317 Modeling Lab, 320 Long-Term Energy, 325
SC.HS.8.3.D Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.	**SE/TE:** Recycling in Nature, 123-123 Lesson 4.3 Review, 131 Chapter 6 Assessment, 138-139 Oxygen and Energy, 312
SC.HS.8.3.E Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	**SE/TE:** Pyramid of Energy, 121 Pyramids of Biomass and Numbers, 122 Interactivity, 122 Lesson 4.2 Review, 122
SC.HS.8.3.F Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.	**SE/TE:** Nutrient Cycles, 126-128 The Carbon Cycle, 126 The Carbon Cycle , 127 Atmospheric Carbon Dioxide Concentrations, 128 Lesson Review, 131

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SC.HS.9 Heredity: Inheritance and Variation of Traits	
SC.HS.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits.	
SC.HS.9.4.A Develop and use a model to explain the relationships between the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.	**SE/TE:** Problem Based Learning, 374-375 Chapter 12 Assessment, 406-407 Gene Linkage and Gene Maps, 398-399 Karyotypes, 474-475 Case Study, 478 Quick Lab: Modeling DNA Replication, 479 Performance-Based Assessment, 498-499
SC.HS.9.4.B 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.	**SE/TE:** Effects of Mutations, 459-461 Sources of Genetic Variation, 582-583 Technology on the Case, 463 Quick Lab: Modeling DNA Replication, 426 Genes and the Environment, 392
SC.HS.9.4.C Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	**SE/TE:** Probability and Heredity, 383-384 Probabilities Predict Averages, 385 Performance-Based Assessment, 404-405
SC.HS.10 Biological Evolution	
SC.HS.10.5 Gather, analyze, and communicate evidence of biological evolution.	
SC.HS.10.5.A Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.	**SE/TE:** Biogeography, 560-561 The Age of Earth and Fossils, 561 Whale Evolution, 562-563 Exploration Lab, 565 Genetics and Molecular Biology, 564-565 Lesson Review, 567

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SC.HS.10.5.B Construct an explanation based on evidence that natural selection 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 reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.	**SE/TE:** Characteristics of Living Things, 22-24 Evolution by Natural Selection, 555-557 Lesson Review, 559 Genetics and Molecular Biology, 564-565 Case Study Wrap-Up, 568-569 Performance-Based Assessment, 572-573 Assessment, 574-576 Evolution as Genetic Change, 585-587 Competition and Continued Evolution, 595
SC.HS.10.5.C 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.	**SE/TE:** Natural Selection on Single-Gene Trait, 586-587 Effect of Color Mutations on Lizard Survival, 586 Natural Selection of Polygenic Traits, 586-587 Figure 18.6, 587 Lesson Review, 591 Assessment, 606-608
SC.HS.10.5.D Construct an explanation based on evidence for how natural selection leads to adaptation of populations.	**SE/TE:** Lesson Review, 567 Evolution by Natural Selection, 555-557 Testing Natural Selection, 565-567 Lesson Review, 559 Case Study Wrap-Up, 568-569 Performance-Based Assessment: Evolution in Action, 572-573 Assessment, 574-576
SC.HS.10.5.E 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.	**SE/TE:** Limiting Factors and Extinction, 157 Lesson Review, 157 Putting the Puzzle Together, 548 Isolating Mechanisms, 592-593 Speciation in Darwin's Finches, 594-595 Case Study Wrap-Up, 600-601 Performance-Based Assessment, 604-605 Assessment, 607-608 Patterns of Extinction, 654 Lesson Review, 658